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A COMPUTER CODE FOR STORING AND
RETRIEVING DATA AND DEVELOPING
IMPROVED SOLIDS FOR FIXATION OF
HIGHLY RADIOACTIVE WASTES

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OAK RIDGE NATIONAL LABORATORY

operated by

UNION CARBIDE CORPORATION

for the

U.S. ATOMIC ENERGY COMMISSION

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CONTENTS

	Page
Abstract.....	1
Introduction.....	2
Description of Code.....	4
Physical Properties Included in the Code.....	5
Data-Sheet Entries	9
References.....	13
Appendix A	15
Appendix B.....	24

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ABSTRACT

A computer code was developed for storing, retrieving, and correlating the data generated by programs for the fixation of highly radioactive wastes in stable, solid media.

Properties considered important for the design of equipment to produce these solids as well as the design of facilities to store them are included in the code. In addition to basic chemical composition of each mixture or melt, viscosity, thermal conductivity, heat capacity, volatility data, and corrosiveness are among these properties. The experimental data describing a melt is punched on standard 80-column data cards. The code as now programmed requires eight data cards to describe each melt. However, provisions are made so that 99 data cards may be used for each melt to provide for future additions as they are necessary.

The mechanics of transferring experimental data to the data sheet is described in detail. A specific example is worked out item by item to illustrate the use of the data sheets. The flowsheet for the code and the FORTRAN II code are presented so that anyone desiring to use the code in toto can do so readily.

Nearly five hundred melts have been developed and included in the code. The melts were developed from wastes simulating those expected from the various Purex processes, the TBP-25 process, and the Darex process. About three hundred and fifty of the melts were developed for the Purex waste solution, about sixty for TBP-25 waste solutions, and about sixty for Darex waste solutions. A condensed readout of the more important properties for all melts developed at ORNL to date is presented. Any or all of the melt properties can be included in the readout depending on the listing desired.

The code can accommodate all data currently generated and provides for possible addition of unforeseen variations in both compositions and properties. It will also provide a convenient way of exchanging data between different groups working on the fixation problem. Use of the code with additional input data to predict optimum melt compositions will be the subject of future work.

INTRODUCTION

The purpose of this report is to describe in detail the development and the use of a computer code. The code was developed for storing and retrieving data generated in the melt development program for fixation of highly radioactive waste solutions in stable, solid media. A future use of the code will be the prediction of new melts from existing data.

The waste solutions generated during processing of spent reactor fuels present a problem in the nuclear power industry. The radioactive elements in these wastes must be contained or immobilized in a manner to prevent contamination of the biosphere in the event of their accidental release. Presently the most common way to contain them is to store the waste solutions in tanks in remote areas. This method is generally considered inadequate not only because of the number of huge tanks required but also because of the easily dispersable form of the wastes. Many solutions to the problem of safe economical disposal of radioactive wastes have been studied in the United States and abroad.

In Canada the approach has been to incorporate the waste in a glass formed by the addition of nepheline syenite which, when combined with the waste, results in a glass of low leachability.¹ In the United Kingdom, the principal approach has been to fix the waste in borosilicate glasses,² though other types of glass have been considered. In France, several different approaches are being tried,³ including a rotary calciner coupled to a continuous fusion furnace. In the USSR, two different processes are being developed, namely, spray calcination⁴ and fluidized-bed calcination.⁵ These calcines are subsequently incorporated in silicate glasses.⁴ ORNL^{6,7} (Oak Ridge National Laboratory) is considering the pot-calcination process in which the waste is stored (disposed of) in its original container either as calcine (without melting) or as a glass. Pacific Northwest Laboratory (PNL) is developing spray calcination.⁸ The calcined material may be melted in the disposal container (pot) if proper fluxing agents have been added. Idaho Chemical Processing Plant (ICPP) is investigating fluidized-bed calcination.⁹ The Brookhaven National Laboratory (BNL) is developing a process in which the waste is continuously converted to a phosphate glass

in an all-liquid system.¹⁰ The glass is discharged into a pot which serves as the storage vessel. A rotary calciner has also been studied at BNL.¹¹ Regardless of the fixation process adopted, the development of solids suitable for long-term storage is an integral part of high-level radioactive waste disposal throughout the world.

The aim of the ORNL program for fixation of highly radioactive wastes is to produce an insoluble solid that contains a high percentage of radioactive elements and that has long-term chemical and mechanical stability and high thermal conductivity. As mentioned previously, ORNL has developed the pot calcination process and the rising level pot-glass process. Ultimate disposal as an innately safer glassy product requires the development of suitable melts. Waste types that have been included in these melt development studies at ORNL are (1) aluminum nitrate wastes from the reprocessing of aluminum-type nuclear fuels (TBP-25 process), (2) wastes resulting from the reprocessing of stainless steel fuel elements by either the Darex process (Darex wastes) or the electrolytic process, and (3) wastes resulting from the Purex solvent extraction process. The greatest volumes of wastes currently in existence in the U.S. are derived from the Purex solvent extraction process. Wastes in this class range from solutions that contain large amounts of iron and sulfate to those that consist almost entirely of sodium nitrate plus fission product nitrates. Therefore most of the solids development work at ORNL has been with Purex process wastes.

Over 500 melts have been developed in the laboratory at ORNL for fixing highly radioactive wastes in stable, solid media. The majority of these melt studies thus far have been with waste solutions containing mainly the chemicals used to dissolve the fuel elements. However, studies are also being made with wastes containing appropriate concentrations of simulated fission products.

Since reactors in the future will be designed to use new fuel types as well as the established fuels more efficiently, new waste solutions as well as the older types containing a different spectrum of fission products will be generated. These wastes will require development of new melts or modifications of old melts so that the solids in these wastes will be incorporated in solid media suitable for ultimate storage. This continuing program of melt development will generate a tremendous amount of data.

The storage and particularly the interpretation of these data present difficult problems. If the work is to be of maximum value, a number of physico-chemical properties must be determined for each melt and the variations in these properties correlated with melt composition. Numerical calculations with a slide rule or desk calculator followed by alignment and interpretation of these data when tabulated or plotted is time-consuming and cumbersome. Indeed, as the number of waste types, compositional variations, and number of properties needed increase, this approach will become hopelessly inadequate.

So, to obtain a faster and more accurate way of handling the vast amount of data for the melt program, a high-speed computer code was developed. The first phase was concerned primarily with data storage and retrieval. The result was a concise summary of the melts developed thus far in the ORNL laboratory program. One criterion used in designing the code was that it be able to accommodate data generated at sites other than ORNL. Exchange of information between sites will eliminate much duplication of effort. Such exchange will be expedited if results are recorded in a standard coded form suitable for computer use at the receiving site. The present arrangement permits the exchange of coded data, but information received will not be of maximum value unless standardized methods are used for determining melt properties.

Future development of the code includes adapting it to the predicting of more desirable melts. To prepare for this phase of the code, we are studying melt properties as functions of various chemical ratios of melt components. Once correlations have been established, prediction of melt properties may be possible without the numerous laboratory experiments now required to develop a useable melt.

DESCRIPTION OF CODE

The computer code was designed to provide for data storage, retrieval, and interpretation. The first phase of the code - data storage and retrieval - was a tangible problem that could be solved in a straightforward manner. The second phase of the code - data interpretation - was a more difficult problem to define since all calculations that may eventually be needed cannot be predicted. The problem was solved by building as much versatility as possible into the code. Melt composition intercomparisons can be made. Since full utilization of this second phase of the code will require

more time, this report will describe primarily melt properties included in the code and the organization of input data to the code.

Physical Properties Included in the Code

The number of properties that could be used for each melt would make an impractically long list, and the properties selected for use in this code represent a compromise. In addition to the basic chemical composition, the data sheet for code input information contains such properties as viscosity, thermal conductivity, heat capacity, etc., and provisions for adding any other properties considered important.

The data sheet has 80 columns, as do standard 80-column punch or data cards. The horizontal headings on the data sheet represent data cards for the code input. Eight data cards are required for each melt. The code as programmed will accommodate 99 data cards for each melt. However, cards may be added without restriction where they are needed.

The first 20 columns of each data card are used for melt identification. The first four columns of the cards are for the melt number. This number is simply used for sequential ordering of cards. The next two columns, 5 and 6, are for the data card number. Columns 7 through 17 are used for recording the location of a melt; that is, columns 7 through 12 are used for notebook number, 13 through 15 for the notebook page number, and 16 through 17 for the number of a melt on the notebook page. Columns 18 through 19 are used for the waste type. A number is assigned to each waste type (Table 1) to minimize the space required on the data sheet. Column 20 of each data card is left open to be used for computer instructions. An entry of minus one (-1) on any data card in this column will exclude the remainder of the code at the end of that data card. Columns 21-76 of card 1 and columns 21-69 of card 2 are used for coding the additives for code output calculations. Columns 77-80 of card 1 were left open for computer instructions that may be needed at a later date. With the exception of volatility data entries on card 8, a floating rather than a fixed decimal was used throughout the program because of the wide range of numbers needed to express the concentrations of the waste solutions and additives.

Table 1. Composition of Highly Radioactive Wastes Used in ORNL Melt Studies

Code Number	1	2	3	4	5	6	7
Constituent (g-moles/liter waste)	FTW-65, single ^a conc.	FTW-65 conc. X3 ^a	1WW ^a	Non- Sulfate Purex ^a	TBP-25 ^b	Darex ^c	WSEP- Purex 1 ^a
H ⁺	0.5	1.5	5.6	3.0	0.5	2.0	5.00
Na ⁺	0.3	0.9	0.6	0.6	--	--	0.138
Al ³⁺	0.05	0.15	0.1	0.2	1.6	--	0.001
Fe ³⁺	0.10	0.30	0.5	0.05	0.002	1.2	0.93
Cr ³⁺	0.02	0.06	0.01	0.006	--	0.4	0.012
Ni ²⁺	0.01	0.03	0.01	0.006	--	0.2	0.005
Hg ²⁺	0.0035	0.0105	--	--	0.01	--	<0.001
Ru	0.002	0.006	0.002	--	--	--	0.032
Mn	--	--	--	--	--	0.04	--
SO ₄ ³⁻	0.15	0.45	1.0	--	0.026	--	--
PO ₄ ³⁻	0.005	0.015	--	0.02	--	--	0.003
SiO ₃	0.01	0.03	--	--	--	--	0.01
F ⁻	0.0005	0.0015	0.0005	--	--	--	<0.001
NO ₃ ⁻	~1.0	~3.1	~6.1	~4.4	~5.4	~7.2	~8.80
Cl ⁻	--	--	--	--	--	0.001	--

^aPurex Process - Tributyl phosphate solvent in an inert diluent is contacted with a solution of uranium and fission products in nitric acid. This process is used for processing of irradiated natural uranium. By far the largest volume of waste now being produced is generated by this process.

^bTBP-25 Process - Designed to recover enriched uranium from irradiated uranium-aluminum fuel elements. The fuel elements are dissolved in nitric acid using a mercuric nitrate catalyst to give a solution of aluminum nitrate and uranyl nitrate. The extraction solvent is tributyl phosphate in an inert diluent. The waste is primarily aluminum nitrate plus fission products.

^cDarex Process - Dilute aqua regia is used to dissolve stainless steel-constituted fuels. After removal of chloride ion down to about 100 ppm by nitric acid stripping, the uranium (and plutonium, if present) is recovered by tributyl phosphate extraction.

With the exception of fluoride and chloride, which are listed as F^- and Cl^- , additives are listed as oxides for making code output calculations. Formula weight, concentration, and density are needed for each oxide. Thus a master list of compounds with formula weights, densities, and numbers to represent the additives was compiled. The numbers used are those given in Lange's Handbook of Chemistry, 10th edition. Additives on the data sheet are entered as numbers from this master list, plus the given concentration. When this information is needed, namely, the formula weight and density, it is retrieved from the master list by referring to the number of the compound. The glass-making additives, exactly as added to the waste solution, are entered on card 6, columns 26 through 80. Only compound numbers and concentrations are entered on the data sheet. Any information needed about a given compound is retrieved by using the compound number and the master list referred to previously.

Card 2 (columns 69-77) and card 3 (columns 21-38) are used for melt properties. (Hyphens mean "through": 69 through 77.) Columns 78-80 of card 2 are left open for future use as needed for computer instructions. Properties such as volume reduction, percentage of waste oxides, calculated pore-free density, and porosity are calculated from code input data. Other properties are simply coded as input data and are read out as the information is desired. Melt appearance and corrosiveness appear as numbers (Fig. 1, columns 24-28, card 3). These numbers correspond to general appearance (Table 2) and corrosion (Table 2) categories.

Waste compositions must be available to make melt-composition calculations. For purposes of initial development, several presumably representative compositions have been arbitrarily chosen for study; however, any waste solution can be included in the code. The data sheet is arranged so that waste composition is entered with each melt. This space is provided on the remainder of card 3 (columns 79-80 are left open), card 4, card 5, the first five columns of card 6 (after melt identification), card 7, and columns 21-25 of card 8. Card 7 was added for this purpose after it was discovered that some possible waste components had been overlooked. The space on card 8 is used so that the lanthanide grouping may be broken down as concentrations

Fig. 1. Data Sheet for Code Input Melt Information.

[illegible]

of the individual elements as desired. Each heading in the waste vector (such as Na_2O) is linked with the master list of compounds which provides the information needed to make calculations. The concentration of each component is all that is entered in this vector. This may be contrasted with the additive vectors in which the compound number is necessary. If no entry is made under a given heading, it is assumed that this component is not in the waste.

Card 8 is devoted to properties that can have multiple entries, that is, the property is a function of some parameter or variable. Each heading, or property, on the card is an array within a matrix. The flexibility of this vector can be seen by considering for example the heading, "Lanthanides," "Leachability," and "Viscosity." Entries under "Lanthanides" are made as concentrations of various oxides, leachability is recorded as a function of time, and viscosity as a function of temperature. Any property requiring multiple entries can be coded regardless of the parameter or variable.

Data-Sheet Entries

The mechanics of entering a melt on the data sheet (Fig. 1) will be illustrated with a specific example. Consider for example Purex FTW-65 waste concentrated by a factor of three (Table 1) to which the ingredients (expressed as g-moles added to a liter of waste) $1.0 \text{ H}_3\text{PO}_4$, $1.1 \text{ LiOH} \cdot \text{H}_2\text{O}$, $0.5 \text{ Al}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$, and $0.2 \text{ Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ were added. Laboratory results showed that the initial softening temperature was 750°C , the melting temperature was 800°C , and that the operating temperature for the melt should be 850°C . The initial softening temperature is taken to be the temperature at which a fluid phase first appears. The melting temperature is taken as the temperature at which the melt is fluid and homogeneous. The temperature at which the melt is sufficiently fluid to be poured easily from its crucible is taken as the operating temperature. These temperatures are estimated from visual observations and are not accurately measured. The appearance of this product on cooling was homogeneous and ceramic-like. A leach test was made on a sample of the melt. The leachate was analyzed and completely renewed at the end of each week for nine weeks. The leach rates, calculated from the expression $(\text{activity leached cm}^{-2} \text{ day}^{-1})/$

(activity per gram of melt), are $3.7 \times 10^{-3} \text{ g cm}^{-2} \text{ day}^{-1}$ at the end of six days, 4.2×10^{-3} at the end of 14 days, 1.8×10^{-4} at the end of 21 days, 1.1×10^{-4} at the end of 42 days, and 7.6×10^{-5} at the end of 63 days. Thermogravimetric analysis during which the sample was held for 100 min at the operating temperature of 850°C showed a 10.7% SO_3 volatility. The basic data for this melt is recorded in notebook number A-3135G, page 3, and the number of the melt on this page is 2. The melt number assigned to this particular melt is 2. (It is purely coincidental that the melt number corresponds to the page melt number. As mentioned previously, the number assigned to a melt is arbitrary.) This information is entered on the Data Sheet (Fig. 1) as follows:

1. Melt identification data is entered on each of the data cards, 1 through 8, columns 1 through 19. Code for waste type, FTW-65-Con. X3, is in Table 1. Note that the zeros are entered in the columns not required under Melt Number, Card Number, Notebook Page Number, Page Melt Number, and Waste Type. Column 20 is left blank with the exception of the last card used for a given melt — in this case card 12. Minus one (-1) is entered in this column of the last card to terminate the remainder of the code for that melt.

2. Compound numbers for the additive oxides are obtained from the master list (Table 3). These numbers are: 21 for Al_2O_3 , 459 for CaO , 1146 for Li_2O , and 1578 for P_2O_5 . These numbers are entered in the first four columns under the proper heading on cards 1 and 2. The last three columns under each heading are for additive concentration. Specifically, consider the heading LITHIUM, columns 21 through 27 of card 1. The compound number 1146 for Li_2O is entered in columns 21-24. The amount of $\text{LiOH} \cdot \text{H}_2\text{O}$ added to a liter of waste to form the melt was 1.1 g-moles, so the concentration of Li_2O would be 0.55 g-mole. This value 0.55 is entered in columns 25-27. The other additives are entered in the same manner under the proper headings.

3. The initial softening temperature of 750°C , pouring temperature of 800°C , and operating temperature of 850°C are entered under the proper headings on cards 2 and 3. These headings are columns 69-72 card 2, 73-76 card 2, and 21-24 card 3,

Table 2. Computer Code Numbers for Melt Appearance and Corrosion

Code	Appearance	Corrosion
1	Homogeneous glass product	no visible corrosion
2	Homogeneous ceramic product	slight, general
3	Crystalline homogeneous product	medium, general
4	Heterogeneous glass or ceramic	severe, general
5	Heterogeneous crystalline product	localized, pitting
6	Unmelted calcine	localized, intergranular

Table 3. Representative Portion of Master List of Compounds for Computer Code

Compound Number	Compound	Formula Weight	Density
19	$\text{Al}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$	375.15	--
21	Al_2O_3	101.96	3.99
455	$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$	236.16	1.82
459	CaO	56.08	2.62
603	Cr_2O_3	152.02	5.21
824	Fe_2O_3	159.70	5.12
1137	$\text{LiOH} \cdot \text{H}_2\text{O}$	41.96	1.83
1146	Li_2O	29.88	2.013
1443	NiO	74.71	7.45
1550	H_3PO_4	98.00	1.834
1578	P_2O_5	141.95	2.387
1868	RuO_2	133.10	7.2
1948	SiO_2	60.09	2.32
2104	Na_2O	61.98	2.27
2271	SO_3	80.07	1.923
2604	F	19.	--

respectively. Note again that zeros are entered in columns under these headings not required. (Four columns were allotted for temperature entries. Since only three are required here, the entry would be 0750 for 750°C.) Melt appearance expressed as a code number obtained from Table 2 is also entered on card 2, columns 25-26.

4. The composition (Table 3) of the FTW-65 (conc. X3) is expressed as oxides and then entered on cards 3, 4, 5, 6, and 8. For example, the Na^+ concentration in the waste is 0.9 g-mole/liter, or 0.45 mole of Na_2O per liter (M/L). The space provided for the sodium entry is on card 3, columns 39-43. Note that no compound number is needed here. The other waste components are entered under the proper headings in the same manner.

5. The additives exactly as added are entered on card 6. The compound numbers for these additives are in Table 3. Consider the additive $\text{LiOH}\cdot\text{H}_2\text{O}$. This entry is made on card 6, columns 26-32. However, the entry could be made under any additive heading on card 6. No specific order need be followed in making these additive entries. The compound number 1137 is entered in columns 26-29. The concentration, 1.1 g-moles added to a liter of waste, is entered in columns 30-32. The other additives are entered in the same manner.

6. Leach rate and volatility data are entered on card 8. The space for leach data is provided in columns 26 through 34. Columns 26-28 are for leach time in days. Columns 29-34 are for the leach values that correspond to the time interval indicated in the preceding columns. Columns 29-32 are for the coefficient, and 33-34 for the exponent. Exponents are for base 10. In making multiple entries a data card is required for each additional entry. This is an example of the array within a matrix mentioned previously. The SO_3 volatility is entered in columns 53-55. The decimal point is fixed, not floating, for volatility entries.

The completed data sheet for this example is shown in Fig. 1. A condensed output, or readout, of the code for this melt is shown in Appendix B.

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Appendix A - Flow Chart for the FORTRAN II Program Used in Waste Fixation Studies

Appendix A - Flow Chart (continued)

Appendix A - Flow Chart (continued)

Appendix A - Flow Chart (continued)

FORTRAN II PROGRAM FOR WASTE FIXATION STUDIES

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      DIMENSION A(15), AM(15), NCA(15), NAS(15), FM(8), FMA(3), FMB(3), BGV(50), 30180005
      INA(15), NAV(15), AW(15), AWM(15), B(50), HY(65,3), BM(50), HA(65),
      2BW(50), NBS(50), WBV(50), BWM(50), BWV(50), PMS(65), NWAV(11), NAPV(11),
      3PWS(65), PMD(65), PWD(65), HT(65), Z(6), NBV(50), NBVH(16),
      4MA(99), NC(99), CER(3), AER(3), WER(3), HBV(50), ND(15),
      5MT(101), T(101,5), TITLE(13), MER(100), ERH(100,3), X(50,14), D(65)
      READINPUTTAPE10,70,(FM(1),I#1,3),(FMA(1),I#1,3),(FMB(1),I#1,3), 30183711
      1(FM(1),I#7,8),ADD,WASTE
70  FORMAT(11A6,2A1) 30184006
      READINPUTTAPE10,70,(CER(1),I#1,3),(AER(1),I#1,3),(WER(1),I#1,3)
      KER#0 30182201
      K#0 30182202
      NT#0 30182205
249 NT#NT+1 30182207
      READINPUTTAPE10,250,MT(NT),(T(NT,1),I#1,5) 30182209
250 FORMAT(15,3A6,F5.2,F5.3) 30182211
      IF(MT(NT))251,257,249 30182213
257 WRITEOUTPUTTAPE9,400
400 FORMAT(42HZERO ENTRY IN MASTER IDENTIFICATION TABLE)
      GOTO777
251 NT#NT-1 30182216
      NBC#0 30182302
      NPT#0 30182303
243 NBC#NBC+1 30182305
      READINPUTTAPE10,244,(NBVH(1),I#1,16) 30182307
244 FORMAT(15I5,4X,11) 30182311
      IF(NBC-NBVH(16))245,246,245 30182309
245 WRITEOUTPUTTAPE9,401
401 FORMAT(32HWASTE VECTOR CARDS OUT OF ORDER)
      GOTO777
246 DO305I#1,15
      IF(NBVH(1))248,306,7000
7000 NEI#NBI+1 30182315
305 NEV(NBI)#NBVH(1) 30182323
      GOTO243
306 WRITEOUTPUTTAPE9,402
402 FORMAT(33HWASTE VECTOR ENTRY IN WASTE VECTOR CARDS)
      GOTO777 30182710
248 DO240I#1,NBT 30182404
      DO241J#1,NT 30182406
      IF(NBV(1)-MT(J))241,242,241 30182408
241 CONTINUE 30182410
      WRITEOUTPUTTAPE9,7001
7001 FORMAT(39HWASTE VECTOR ENTRY NOT IN MASTER TABLE)
      GOTO777
B 242 HBV(1)#T(J,1)
      BGV(1)#T(J,5)
240 BWV(1)#T(J,4) 30182420
      READINPUTTAPE10,258,(NAV(1),I#1,15) 30182422
258 FORMAT(15I5) 30182424
      READINPUTTAPE10,999,(TITLE(1),I#1,13) 30184003
999 FORMAT(13A6) 30184005
      READINPUTTAPE10,994,NOT,(NAPV(1),I#1,11),(NWAV(1),I#1,11)
994 FORMAT(14,22I2) 30185006
      DO993I#1,11 30185009
      IF(NWAV(1))992,991,991 30185011
992 NWA#I-1 30185013
991 IF(NAPV(1))990,993,993 30185015
990 NAP#I-1 30185017
993 CONTINUE 30185019
1000 READINPUTTAPE10,20,MN(1),NC(1),H1,H2,(NA(1),A(1),I#1,8)
      20 FORMAT(14,I2,A6,A5,3X,8(14,F3.2))
      IF(MN(1))477,477,201
477 IF(KER)403,403,404 30182712
300 WRITEOUTPUTTAPE9,407
407 FORMAT(77HDATA ALIGNMENT ERRORS ARE EXCESSIVE. EXAMINE INPUT DATA
      1 BEFORE CONTINUATION.)
      GOTO409

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FORTRAN II PROGRAM FOR WASTE FIXATION STUDIES (Continued)

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403 WRITEOUTPUTTAPE9,405
405 FCRMAT(37HNO DATA ALIGNMENT ERRORS WERE FOUND.)
   GOTO777
404 WRITEOUTPUTTAPE9,406
406 FORMAT(50HITHE FOLLOWING DATA ALIGNMENT ERRORS WERE FOUND---)
409 WRITEOUTPUTTAPE9,410,(1,MER(I),(ERH(1,J),J#1,3),I#1,KER)
410 FORMAT(27HNO MELT SOURCE OF ERROR/ICH          NO./((I4,I6,2X5A6))
777 CALLEXIT
207 JER#1
259 KER#KER+1
      MER(KER)#MN(1)
      DO260I#1,3
      GOTO(261,262,263),JER
B 261 ERH(KER,I)#CER(I)
      GOTO260
B 262 ERH(KER,I)#AER(I)
      GOTO260
B 263 ERH(KER,I)#WER(I)
260 CONTINUE
      IF(KER-100)1000,300,300
201 READINPUTTAPE10,22,MN(2),NC(2),
      1(NA(1),A(1),I#9,15),ST,PT,MN(3),NC(3),OT,APP,
      2(Z(1),I#1,6),(B(1),I#1,8),MN(4),NC(4),LWA,
      3(B(1),I#9,20),MN(5),NC(5),(B(1),I#21,32),
      4MN(6),NC(6),B(33),(ND(1),D(1),I#1,7),MN(7),NC(7),(B(1),I#34,45)
22 FCRMAT(I4,I2,I4X,I4,F3.2,I4,F3.2,I4,F3.2,
      1I4,F3.2,I4,F3.2,I4,F3.2,2F4.0/
      2I4,I2,I4X,F4.0,7F2.0,8F5.5/I4,I2,1IX,I2,1X,I2F5.5/
      3I4,I2,I4X,I2F5.5/I4,I2,I4X,F5.5,I4,A3,I4,A3,I4,A3,I4,A3,
      4I4,A3,I4,A3/I4,I2,I4X,I2F5.5)
      N#0
203 N#N+1
      JR#N+7
      READINPUTTAPE10,24,MN(JR),NC(JR),KWA,K7,(X(N,I),I#1,I4)
24 FCRMAT(I4,I2,1IX,I2,1I,F5.0,F6.0,I2F3.0)
      IF(K7)205,205,203
205 IF(NOT)989,989,987
987 LC#NOT
      IF(LOT-NOT)986,986,1000
986 LAP#APP
      DO985I#1,NAP
      IF(LAP-NAPV(I))985,984,985
985 CONTINUE
      GOTO1000
984 CL983I#1,NWA
      IF(LWA-NWAV(I))983,989,983
983 CCNTINUE
      GOTO1000
989 CC206I#1,JR
      IF(MN(1)-MN(I))207,206,207
206 CONTINUE
      CC208I#1,JR
      IF(I-NC(I))207,208,207
208 CONTINUE
      SAM#0.
      SAWM#0.
      SAV#0.
      KA#0
      DO100I#1,15
      IF(NA(I))100,100,101
101 KA#KA+1
      AM(KA)#A(I)
      NCA(KA)#NA(I)
      NAS(KA)#NAV(I)
      DO102J#1,N1
      IF(MT(J)-NA(I))102,103,102
102 CCNTINUE
      GOTO104

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FORTRAN II PROGRAM FOR WASTE FIXATION STUDIES (Continued)

103	AW(FA)#T(J,4)	30181202
	AWM(KA)#AW(KA)*A(I)	30181211
	SAM#SAM+A(I)	30181213
	SAWM#SAWM+AWM(KA)	30181215
	SAV#SAV+AWM(KA)/T(J,5)	
100	CONTINUE	30181217
	IF(KA)104,104,105	30181302
104	JEP#2	30182605
	GOTO259	30182609
105	KI#0	30182003
	DO230I#1,7	
	IF(ND(I))230,230,231	30182007
231	KI#KI+1	30182009
B	D(KI)#D(I)	
	DO235J#1,NT	30182011
	IF(ND(I)-MT(J))235,236,235	30182013
235	CONTINUE	30182015
	GOTO104	
B 236	HY(KI,1)#T(J,1)	30184017
B	HY(KI,2)#T(J,2)	30184019
B	HY(KI,3)#T(J,3)	30184021
230	CONTINUE	30182025
	IF(KI)104,104,238	
238	SBM#0.	
	SBWM#0.	30181308
	SBV#0.	
	KB#0	30181309
	DO106I#1,NBT	
	IF(B(I))106,106,107	30181313
107	KB#KB+1	30181315
	KW#KA+KB	
B	HA(KW)#HBV(1)	
	BM(KB)#B(1)	30181323
	BW(KB)#BWV(1)	30181325
	NBS(KB)#NBV(1)	30181402
	BWM(KB)#BWV(1)*B(1)	30181404
	SBM#SBM+B(1)	30181406
	SBWM#SBWM+BWM(KB)	30181408
	SBV#SBV+BWM(KB)/BGV(1)	
106	CONTINUE	30181410
	IF(KB)108,108,109	30181412
108	JER#3	
	GOTO259	30182603
109	SMP#SAM+SBM	30181421
	SWP#SAWM+SBWM	30181423
	SV#SAV+SBV	
	WCP#SBWM/SWP	30183702
	PFD#SWP/SV	
	DO114I#1,KB	30181503
	KS#KA+I	30181505
	PMD(KS)#0.	30181507
B	HT(KS)#WASTE	30181509
	PMS(KS)#BM(1)/SMP	30181511
114	PWS(KS)#BWM(1)/SWP	30181513
	DO110I#1,KA	30181603
	PMD(I)#0.	30181605
	PMS(1)#AM(1)/SMP	30181607
	PWS(1)#AWM(1)/SWP	30181609
B	FF(I)#ACC	30181611
	DO997J#1,NBT	
	IF(NAS(I)-NBV(J))997,990,997	
997	CONTINUE	
	GOTO104	
B 996	HA(1)#HBV(J)	30181613
	DO111J#1,KB	30181615
	IF(NAS(I)-NBS(J))111,112,111	30181617
111	CONTINUE	30181619
	GOTO110	

Fortran II Program for Waste Fixation Studies (Continued)

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112 KS#KA+J                                30181621
PMD(KS)#(AM(I)+BM(J))/SMP                 30181623
PWD(KS)#(AWM(I)+BWM(J))/SWP                30181624
110 CONTINUE                               30181625
KZ#K1+1
DO995 I#KZ,KW
B HY(I,1)#FMA(3)
B HY(I,2)#FMA(3)
B HY(I,3)#FMA(3)
B 995 D(I)#FMA(3)
JT#1                                         30181703
DO115 I#1,KW
IF(K)116,116,117                           30181707
117 GOTO(118,119),JT                       30181709
118 IF(K-3)116,120,120                     30181712
116 K#53
WRITEOUTPUTTAPE9,998,(TITLE(J),J#1,13)    30184001
998 FORMAT(1F13A6)                         30184009
WRITEOUTPUTTAPE9,121
121 FORMAT(99H0 NOTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND
1W MEANS WASTE. T IS IN DEGREES CENTIGRADE./
2118H0
3% CONC. CALC. OPER. WT.
4118H MELT NO. I COMP. MOLE % WT. % WASTE/
5 ADDITIVES M/L APP. PORE FREE D. TYPE//) WO
120 JT#2                                     30181723
WRITEOUTPUTTAPE9,122,MN(1),OT,WOP,APP,PFD,LWA
122 FORMAT(18,F46.0,2PF9.2,3OX,OPF4.0,OPF13.2,18)
K#K-1                                       30181725
119 IF(PMD(1))123,124,123                  30181802
B 123 FM(4)#FMA(1)
B FM(5)#FMA(2)
B FM(6)#FMA(3)                             30184014
GOTO125                                     30181808
B 124 PMD(1)#FMA(3)
B PWD(1)#FMA(3)
B FM(4)#FMB(1)
B FM(5)#FMB(2)
B FM(6)#FMB(3)
125 K#K-1                                   30181820
115 WRITEOUTPUTTAPE9,FM,HT(1),HA(1),PMS(1),
IPMD(1),PWS(1),PWD(1),(HY(I,J),J#1,3),D(1) 30184023
GOTO1000                                    30184025
END(1,1,0,0,0,0,0,0,1,0,1,0,0,0,0,0)    30181825

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FORTRAN II PROGRAM FOR WASTE FIXATION STUDIES

STORAGE NOT USED BY PROGRAM

DEC OCT
4592 10760

DEC OCT
32561 77401

STORAGE LOCATIONS FOR VARIABLES APPEARING IN DIMENSION AND EQUIVALENCE STATEMENTS

DEC OCT	DEC OCT	DEC OCT	DEC OCT	DEC OCT
AER 3372 06454	AM 4576 10740	A 4591 10757	AWM 4422 10506	AW 4437 10525
BGV 4517 10645	BM 4357 10405	B 4407 10467	BWM 4092 07774	AW 4242 10222
BWV 4042 07712	CER 3375 06457	U 5087 06017	ERH 2322 04422	FMA 4523 10653
FMB 4520 10650	FM 4531 10663	HA 4307 10323	HBV 3366 06446	HT 3710 07174
HY 3022 05716	MER 3187 06163	MN 3575 06765	M1 3301 06345	NAPV 3916 07514
NA 4467 10563	NAC 4546 10702	NAV 4452 10544	NRS 4192 10140	NBVH 3589 07005
NBV 3639 07067	NCA 4561 10721	NC 3474 06622	ND 3316 06304	NWAV 3927 07527
PMD 3840 07400	PMS 3992 07630	PWD 3775 07277	PWS 3905 07501	TITLE 3200 06200
T 2827 05413	WBV 4142 10056	WER 3369 06451	X 2022 03746	Z 3645 07075

STORAGE LOCATIONS FOR VARIABLES NOT APPEARING IN COMMON, DIMENSION, OR EQUIVALENCE STATEMENT

DEC OCT	DEC OCT	DEC OCT	DEC OCT	DEC OCT
ADD 1322 02452	APP 1321 02451	HI 1320 02450	H2 1319 02447	I 1318 02446
JER 1317 02445	JR 1316 02444	J 1315 02443	JT 1314 02442	K7 1313 02441
KA 1312 02440	KB 1311 02437	KER 1310 02436	K1 1309 02435	K 1308 02434
KS 1307 02433	KWA 1306 02432	KW 1305 02431	K2 1304 02430	LAP 1303 02427
LOT 1302 02426	LWA 1301 02425	NAP 1300 02424	NBC 1299 02423	NBT 1298 02422
NCT 1297 02421	N 1296 02420	NI 1295 02417	NWA 1294 02416	OT 1293 02415
PF0 1292 02414	PT 1291 02413	SAM 1290 02412	SAV 1289 02411	SAWM 1288 02410
SBM 1287 02407	SBV 1286 02406	SBWM 1285 02405	SMP 1284 02404	ST 1283 02403
SV 1282 02402	SWP 1281 02401	WASTE 1280 02400	WOP 1279 02377	

SYMBOLS AND LOCATIONS FOR SOURCE PROGRAM FORMAT STATEMENTS

EFN LOC	FFN LOC	FFN LOC	FFN LOC	FFN LOC
81K 20 02302	81M 22 02224	810 24 02144	8126 70 02353	813P 121 02134
81SQ 122 02034	817K 244 02336	817Q 250 02351	8182 258 02306	81CG 400 02346
81CH 401 02334	81C1 402 02325	81CL 405 02257	81CM 406 02250	81CN 407 02275
81CQ 410 02236	81V2 994 02304	81V6 998 02136	81V7 999 02305	816QP 7001 02316

LOCATIONS FOR OTHER SYMBOLS NOT APPEARING IN SOURCE PROGRAM

DEC OCT	DEC OCT	DEC OCT	DEC OCT	DEC OCT
11 1260 02354	21 1028 02004	31 1039 02017	41 32767 77777	61 1040 02020
C1G0 1262 02356	C1G1 1263 02357	C1G3 1264 02360	C1G4 1265 02361	C1G5 1266 02362
C1G6 1267 02363	C1G7 1268 02364	C1G8 1269 02365	C1G9 1270 02366	C1GA 1271 02367
C1GB 1272 02370	C1GC 1273 02371	C1GD 1274 02372	C1H1 1275 02373	C1H3 1276 02374
C1H5 1277 02375	C1H7 1278 02376	D113H 566 01066	D113S 649 01211	D1146 715 01313
D1210 160 00240	D121L 247 00367	D1221 312 00470	D1223 321 00501	D1243 692 01264
D133H 565 01065	D1424 334 00516	D1430 626 01162	D143Q 635 01173	D143S 652 01214
D144H 875 01553	D1524 333 00515	D153H 568 01070	D1530 625 01161	D154P 874 01552
D163Q 634 01172	D163S 651 01213	E1F 68 00104	E1I 90 00132	E1Q 132 00204
E112 169 00251	F114 177 00261	F125 338 00522	E12S 466 00722	E13E 544 01040
E13K 592 01120	E13H 601 01131	E130 624 01160	E13P 630 01166	E13V 674 01242
F148 752 01360	E149 757 01365	F141 835 01503	F14L 849 01521	E14N 858 01532
E150 917 01625	E154 971 01713	E155 975 01717	E153 941 01655	

LOCATIONS OF NAMES IN TRANSFER VECTOR

DEC OCT	DEC OCT	DEC OCT	DEC OCT	DEC OCT
EXIT 5 00005	(FIL) 4 00004	(FPT) 0 00000	(RTN) 2 00002	(STH) 3 00003
(TSH) 1 00001				

ENTRY POINTS TO SUBROUTINES NOT OUTPUT FROM LIBRARY

EXIT	(FIL)	(FPT)	(RTN)	(STH)	(TSH)
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EXTERNAL FORMULA NUMBERS WITH CORRESPONDING INTERNAL FORMULA NUMBERS AND OCTAL LOCATIONS

EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC	EFN	IFN	LOC
249	51	00105	257	59	00133	251	61	00140	243	64	00153
246	73	00177	7000	75	00213	3C5	76	00220	306	78	00225
241	83	00257	242	86	00273	24C	88	00277	992	110	00353
990	112	00361	993	113	00364	1CC0	114	00370	477	121	00416
403	124	00427	404	126	00434	4C9	127	00440	777	135	00471
259	137	00502	261	141	00524	262	143	00527	263	145	00532
201	148	00544	203	178	00665	2C5	187	00723	987	188	00727
985	193	00764	984	195	00767	983	197	01003	989	199	01007
208	204	01046	101	211	01076	1F2	217	01127	104	219	01135
104	226	01174	105	228	01201	231	231	01221	235	235	01250
230	240	01265	238	247	01275	1C7	248	01320	106	258	01363
109	262	01377	114	272	01437	997	280	01501	996	282	01507
112	287	01534	110	290	01554	995	296	01573	117	300	01616
116	302	01627	120	309	01657	119	313	01715	123	314	01721
125	323	01742	115	324	01745						

APPENDIX B. Melt Fixation Studies — Computer Code Output

<u>Column Heading</u>	<u>Meaning or Significance</u>
MELT NO.	The number assigned to a given melt for ordering of cards.
I	Differentiation between additive and waste components.
COMP.	Melt constituents (waste plus additives).
MOLE %	Mole percent of melt components. If a given component appears in both additive and waste vectors, the sum of the two appears at the right of the component.
WT. %	Weight percent of melt components. If a given component appears in both additive and waste vectors, the sum of the two appears at the right of the component.
OPER. T.	The operating temperature of the melt (°C).
WT. % WO	The ratio (times 100) of the weight of waste oxides (W under column I) to the total weight of oxides (additive and waste components).
ADDITIVES	Fluxing agents (as they are added) added to the waste solution to form a melt.
CONC. M/L	The concentration of additives that are added to the waste solution. These numbers indicate the number of moles added to a liter of waste solution.
APP.	The appearance of the melt after cooling (Table 2).
CALC. PORE FREE DENSITY	The calculated pore free density. This number is the sum of the weights of the individual components divided by the sum of volumes occupied by the individual components.
WASTE TYPE	Indicates the type of waste used to form the melt (Table 1).

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
1					900.	47.15			2.	2.59	2
	A	LI2O	21.40	7.56			LiOH-H2O	1.1			
	A	CAO	3.75	2.49			CA (NO3)2-4H2O	0.1			
	A	AL2O3	9.39	11.31			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.77	31.49			H3PO4	1.0			
	W	NA2O	16.90	12.37							
	W	NI0	1.13	0.99							
	W	AL2O3	2.82	3.39	14.70						
	W	FE2O3	5.63	10.63							
	W	CR2O3	1.13	2.02							
	W	RU02	0.23	0.35							
	W	P2O5	0.28	0.47	31.96						
	W	S03	16.90	15.99							
	W	SI02	1.13	0.80							
	W	F	0.56	0.13							
2					900.	46.01			2.	2.59	2
	A	LI2O	20.63	7.37			LiOH-H2O	1.1			
	A	CAO	7.24	4.86			CA (NO3)2-4H2O	0.2			
	A	AL2O3	9.05	11.04			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.09	30.73			H3PO4	1.0			
	W	NA2O	16.28	12.07							
	W	NI0	1.09	0.97							
	W	AL2O3	2.71	3.31	14.35						
	W	FE2O3	5.43	10.37							
	W	CR2O3	1.09	1.97							
	W	RU02	0.22	0.35							
	W	P2O5	0.27	0.46	31.19						
	W	S03	16.28	15.60							
	W	SI02	1.09	0.78							
	W	F	0.54	0.12							
3					950.	43.88			2.	2.59	2
	A	LI2O	19.23	7.03			LiOH-H2O	1.1			
	A	CAO	13.50	9.26			CA (NO3)2-4H2O	0.4			
	A	AL2O3	8.44	10.52			AL (NO3)3-9H2O	0.5			
	A	P2O5	16.87	29.30			H3PO4	1.0			
	W	NA2O	15.18	11.52							
	W	NI0	1.01	0.93							
	W	AL2O3	2.53	3.16	13.68						
	W	FE2O3	5.06	9.89							
	W	CR2O3	1.01	1.88							
	W	RU02	0.20	0.33							
	W	P2O5	0.25	0.44	29.74						
	W	S03	15.18	14.88							
	W	SI02	1.01	0.74							
	W	F	0.51	0.12							
4					850.	45.20			2.	2.69	2
	A	LI2O	21.40	7.24			LiOH-H2O	1.1			
	A	BAO	3.75	6.52			BA (NO3)2	0.1			
	A	AL2O3	9.39	10.84			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.77	30.19			H3PO4	1.0			
	W	NA2O	16.90	11.86							
	W	NI0	1.13	0.95							
	W	AL2O3	2.92	3.25	14.09						
	W	FE2O3	5.63	10.19							
	W	CR2O3	1.13	1.94							
	W	RU02	0.23	0.34							
	W	P2O5	0.28	0.45	30.64						
	W	S03	16.90	15.33							
	W	SI02	1.13	0.77							
	W	F	0.56	0.12							
5					850.	42.44			2.	2.78	2
	A	LI2O	20.63	6.80			LiOH-H2O	1.1			
	A	BAO	7.24	12.25			BA (NO3)2	0.2			
	A	AL2O3	9.05	10.18			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.09	28.34			H3PO4	1.0			
	W	NA2O	16.28	11.14							
	W	NI0	1.09	0.89							
	W	AL2O3	2.71	3.05	13.23						
	W	FE2O3	5.43	9.56							
	W	CR2O3	1.09	1.82							
	W	RU02	0.22	0.32							
	W	P2O5	0.27	0.43	28.76						
	W	S03	16.28	14.39							
	W	SI02	1.09	0.72							
	W	F	0.54	0.11							
6					950.	37.81			2.	2.94	2
	A	LI2O	19.23	6.06			LiOH-H2O	1.1			
	A	BAO	13.50	21.82			BA (NO3)2	0.4			
	A	AL2O3	8.44	9.07			AL (NO3)3-9H2O	0.5			
	A	P2O5	16.87	25.25			H3PO4	1.0			
	W	NA2O	15.18	9.92							
	W	NI0	1.01	0.80							
	W	AL2O3	2.53	2.72	11.79						
	W	FE2O3	5.06	8.52							
	W	CR2O3	1.01	1.62							
	W	RU02	0.20	0.28							
	W	P2O5	0.25	0.38	25.63						
	W	S03	15.18	12.82							
	W	SI02	1.01	0.64							
	W	F	0.51	0.10							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PURE FREE O.	WASTE TYPE
7					950.	47.49			2.	2.60	2
	A	LI2O	21.40	7.61			LI OH-H2O	1.1			
	A	MGO	3.75	1.80			BA (NO3)2	0.4			
	A	AL2O3	9.39	11.39			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.77	31.71			H3PO4	1.0			
	W	NA2O	16.90	12.46							
	W	NI0	1.13	1.00							
	W	AL2O3	2.82	3.42	14.81						
	W	FE2O3	5.63	10.70							
	W	CR2O3	1.13	2.04							
	W	RU02	0.23	0.36							
	W	P2O5	0.28	0.48	32.19						
	W	S03	16.90	16.10							
	W	SI02	1.13	0.81							
	W	F	0.56	0.13							
8					950.	46.65			2.	2.62	2
	A	LI2O	20.63	7.48			LI OH-H2O	1.1			
	A	MGO	7.24	3.54			BA (NO3)2	0.4			
	A	AL2O3	9.05	11.19			AL (NO3)3-9H2O	0.5			
	A	P2O5	18.09	31.15			H3PO4	1.0			
	W	NA2O	16.28	12.24							
	W	NI0	1.09	0.98							
	W	AL2O3	2.71	3.36	14.54						
	W	FE2O3	5.43	10.51							
	W	CR2O3	1.09	2.00							
	W	RU02	0.22	0.35							
	W	P2O5	0.27	0.47	31.62						
	W	S03	16.28	15.81							
	W	SI02	1.09	0.79							
	W	F	0.54	0.13							
9					1000.	45.05			2.	2.64	2
	A	LI2O	19.23	7.22			LI OH-H2O	1.1			
	A	MGO	13.50	6.84			BA (NO3)2	0.4			
	A	AL2O3	8.44	10.81			AL (NO3)3-9H2O	0.5			
	A	P2O5	16.87	30.09			H3PO4	1.0			
	W	NA2O	15.18	11.82							
	W	NI0	1.01	0.95							
	W	AL2O3	2.53	3.24	14.05						
	W	FE2O3	5.06	10.15							
	W	CR2O3	1.01	1.93							
	W	RU02	0.20	0.34							
	W	P2O5	0.25	0.45	30.54						
	W	S03	15.18	15.27							
	W	SI02	1.01	0.76							
	W	F	0.51	0.12							
10					900.	29.54			3.	3.17	2
	A	PB0	18.22	31.02			PB0	0.5			
	A	P2O5	36.45	39.45			H3PO4	2.0			
	W	NA2O	16.40	7.75							
	W	NI0	1.09	0.62							
	W	AL2O3	2.73	2.13							
	W	FE2O3	5.47	6.66							
	W	CR2O3	1.09	1.27							
	W	RU02	0.22	0.22							
	W	P2O5	0.27	0.30	39.74						
	W	S03	16.40	10.01							
	W	SI02	1.09	0.50							
	W	F	0.55	0.08							
11					900.	40.38			3.	2.46	2
	A	LI2O	18.22	5.68			LI OH-H2O	1.0			
	A	P2O5	36.45	53.94			H3PO4	2.0			
	W	NA2O	16.40	10.60							
	W	NI0	1.09	0.85							
	W	AL2O3	2.73	2.91							
	W	FE2O3	5.47	9.10							
	W	CR2O3	1.09	1.73							
	W	RU02	0.22	0.30							
	W	P2O5	0.27	0.40	54.34						
	W	S03	16.40	13.69							
	W	SI02	1.09	0.69							
	W	F	0.55	0.11							
12					-0.	51.01			6.	2.62	2
	A	LI2O	17.97	6.45			LI OH-H2O	0.9			
	A	CAO	7.99	5.38			CA (NO3)2-4H2O	0.2			
	A	AL2O3	9.19	11.26			AL (NO3)3-9H2O	0.46			
	A	P2O5	15.18	25.89			H3PO4	0.76			
	W	NA2O	17.97	13.39							
	W	NI0	1.20	1.08							
	W	AL2O3	3.03	3.67	14.93						
	W	FE2O3	5.99	11.50							
	W	CR2O3	1.20	2.19							
	W	RU02	0.24	0.38							
	W	P2O5	0.30	0.51	26.40						
	W	S03	17.97	17.30							
	W	SI02	1.20	0.87							
	W	F	0.60	0.14							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W ₀	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
13					-0.	51.14			6.	2.63	2
	A	LI2O	20.28	7.48			LI OH-H2O	1.0			
	A	CAO	7.80	5.40			CA (NO3)2-4H2O	0.2			
	A	AL2O3	10.14	12.76			AL (NO3)3-9H2O	.52			
	A	P2O5	13.26	23.23			H3PO4	.68			
	W	NA2O	17.55	13.42							
	W	NI0	1.17	1.08							
	W	AL2O3	2.93	3.68	16.44						
	W	FE2O3	5.85	11.53							
	W	CR2O3	1.17	2.19							
	W	RU02	0.23	0.38							
	W	P2O5	0.29	0.51	23.74						
	W	SO3	17.55	17.34							
	W	SI02	1.17	0.87							
	W	F	0.59	0.14							
14					-0.	57.10			6.	2.65	2
	A	LI2O	20.22	7.71			LI OH-H2O	1.0			
	A	CAO	8.43	6.03			CA (NO3)2-4H2O	0.2			
	A	AL2O3	10.11	13.15			AL (NO3)3-9H2O	.48			
	A	P2O5	8.85	16.02			H3PO4	.42			
	W	NA2O	18.96	14.99							
	W	NI0	1.26	1.20							
	W	AL2O3	3.16	4.11	17.26						
	W	FE2O3	6.32	12.87							
	W	CR2O3	1.26	2.45							
	W	RU02	0.25	0.43							
	W	P2O5	0.32	0.57	16.59						
	W	SO3	18.96	19.36							
	W	SI02	1.26	0.97							
	W	F	0.63	0.15							
15					-0.	61.84			6.	2.64	2
	A	LI2O	16.25	6.09			LI OH-H2O	0.7			
	A	CAO	9.29	6.53			CA (NO3)2-4H2O	0.2			
	A	AL2O3	8.36	10.68			AL (NO3)3-9H2O	.36			
	A	P2O5	8.36	14.87			H3PO4	.36			
	W	NA2O	20.90	16.23							
	W	NI0	1.39	1.30							
	W	AL2O3	3.48	4.45	15.13						
	W	FE2O3	6.97	13.94							
	W	CR2O3	1.39	2.65							
	W	RU02	0.28	0.46							
	W	P2O5	0.35	0.62	15.49						
	W	SO3	20.90	20.97							
	W	SI02	1.39	1.05							
	W	F	0.70	0.17							
16					-0.	66.50			6.	2.64	2
	A	LI2O	13.11	4.86			LI OH-H2O	.52			
	A	CAO	10.08	7.02			CA (NO3)2-4H2O	.20			
	A	AL2O3	6.55	8.29			AL (NO3)3-9H2O	.26			
	A	P2O5	7.56	13.32			H3PO4	.30			
	W	NA2O	22.69	17.45							
	W	NI0	1.51	1.40							
	W	AL2O3	3.78	4.79	13.08						
	W	FE2O3	7.56	14.99							
	W	CR2O3	1.51	2.85							
	W	RU02	0.30	0.50							
	W	P2O5	0.38	0.67	13.99						
	W	SO3	22.69	22.55							
	W	SI02	1.51	1.13							
	W	F	0.76	0.18							
17					-0.	66.92			6.	2.63	2
	A	LI2O	10.40	3.76			LI OH-H2O	.40			
	A	CAO	10.40	7.06			CA (NO3)2-4H2O	.20			
	A	AL2O3	5.72	7.06			AL (NO3)3-9H2O	.22			
	A	P2O5	8.84	15.19			H3PO4	.34			
	W	NA2O	23.39	17.56							
	W	NI0	1.56	1.41							
	W	AL2O3	3.90	4.81	11.88						
	W	FE2O3	7.80	15.08							
	W	CR2O3	1.56	2.87							
	W	RU02	0.31	0.50							
	W	P2O5	0.39	0.67	15.86						
	W	SO3	23.39	22.69							
	W	SI02	1.56	1.14							
	W	F	0.78	0.18							
18					1050.	66.96			5.	2.62	2
	A	LI2O	8.98	3.20			LI OH-H2O	.34			
	A	CAO	10.56	7.07			CA (NO3)2-4H2O	.20			
	A	AL2O3	4.75	5.78			AL (NO3)3-9H2O	.18			
	A	P2O5	10.03	16.99			H3PO4	.38			
	W	NA2O	23.77	17.57							
	W	NI0	1.58	1.41							
	W	AL2O3	3.96	4.82	10.60						
	W	FE2O3	7.92	15.09							
	W	P2O5	0.40	0.67	17.66						
	W	SO3	23.77	22.70							
	W	SI02	1.58	1.14							
	W	F	0.79	0.18							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PURE FREE D.	WASTE TYPE
19					1050.	62.56			5.	2.60	2
	A	LI2O	7.68	2.64			LI OH-H2O	.30			
	A	CAO	10.24	6.60			CA (NO3)2-4H2O	.20			
	A	AL2O3	4.10	4.80			AL (NO3)3-9H2O	.16			
	A	P2O5	14.33	23.40			H3PO4	.56			
	W	NA2O	23.04	16.42							
	W	NiO	1.54	1.32							
	W	AL2O3	3.84	4.50	9.30						
	W	FE2O3	7.68	14.10							
	W	CR2O3	1.54	2.68							
	W	RUO2	0.31	0.47							
	W	P2O5	0.38	0.63	24.02						
	W	SO3	23.04	21.21							
	W	SiO2	1.54	1.06							
	W	F	0.77	0.17							
20					900.	57.84			5.	2.60	2
	A	LI2O	11.25	3.90			LI OH-H2O	.48			
	A	CAO	9.37	6.10			CA (NO3)2-4H2O	.20			
	A	AL2O3	5.62	6.66			AL (NO3)3-9H2O	.24			
	A	P2O5	15.47	25.49			H3PO4	.66			
	W	NA2O	21.79	15.18							
	W	NiO	1.41	1.22							
	W	AL2O3	3.52	4.16	10.82						
	W	FE2O3	7.73	13.04							
	W	CR2O3	1.41	2.48							
	W	RUO2	0.28	0.43							
	W	P2O5	0.35	0.58	26.07						
	W	SO3	21.09	19.61							
	W	SiO2	1.41	0.98							
	W	F	0.70	0.16							
21					950.	51.49			5.	2.60	2
	A	LI2O	15.68	5.50			LI OH-H2O	.76			
	A	CAO	8.25	5.43			CA (NO3)2-4H2O	.20			
	A	AL2O3	7.84	9.38			AL (NO3)3-9H2O	.38			
	A	P2O5	16.92	28.19			H3PO4	.82			
	W	NA2O	18.57	13.51							
	W	NiO	1.24	1.09							
	W	AL2O3	3.09	3.70	13.09						
	W	FE2O3	6.19	11.61							
	W	CR2O3	1.24	2.21							
	W	RUO2	0.25	0.39							
	W	P2O5	0.31	0.52	28.71						
	W	SO3	18.57	17.46							
	W	SiO2	1.24	0.87							
	W	F	0.62	0.14							
22					800.	43.72			4.	2.59	2
	A	LI2O	17.90	6.15			LI OH-H2O	1.0			
	A	CAO	7.16	4.61			CA (NO3)2-4H2O	.20			
	A	AL2O3	8.95	10.49			AL (NO3)3-9H2O	.50			
	A	P2O5	21.48	35.04			H3PO4	1.2			
	W	NA2O	16.11	11.47							
	W	NiO	1.07	0.92							
	W	AL2O3	2.68	3.15	13.63						
	W	FE2O3	5.37	9.85							
	W	CR2O3	1.07	1.88							
	W	RUO2	0.21	0.33							
	W	P2O5	0.27	0.44	35.47						
	W	SO3	16.11	14.82							
	W	SiO2	1.07	0.74							
	W	F	0.54	0.12							
23					1000.	43.90			5.	2.57	2
	A	LI2O	14.85	4.94			LI OH-H2O	.80			
	A	CAO	7.43	4.63			CA (NO3)2-4H2O	.20			
	A	AL2O3	7.43	8.42			AL (NO3)3-9H2O	.40			
	A	P2O5	24.13	38.11			H3PO4	1.3			
	W	NA2O	16.71	11.52							
	W	NiO	1.11	0.93							
	W	AL2O3	2.78	3.16	11.58						
	W	FE2O3	5.57	9.89							
	W	CR2O3	1.11	1.88							
	W	RUO2	0.22	0.33							
	W	P2O5	0.28	0.44	38.55						
	W	SO3	16.71	14.88							
	W	SiO2	1.11	0.74							
	W	F	0.56	0.12							
24					1000.	53.11			5.	2.60	2
	A	LI2O	22.88	8.21			LI OH-H2O	1.1			
	A	AL2O3	9.57	11.72			AL (NO3)3-9H2O	.46			
	A	P2O5	15.81	26.96			H3PO4	.76			
	W	NA2O	18.72	13.94							
	W	NiO	1.25	1.12							
	W	AL2O3	3.12	3.82	15.54						
	W	FE2O3	6.24	11.97							
	W	CR2O3	1.25	2.28							
	W	RUO2	0.25	0.40							
	W	P2O5	0.31	0.53	27.49						
	W	SO3	18.72	18.01							
	W	SiO2	1.25	0.90							
	W	F	0.62	0.14							

WASTE STUDIES---GRNL

NCTL---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	T	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
25					1100.	52.33			3.	2.59	2
	A	LI20	25.96	9.56			LI OH-H2O	1.3			
	A	AL203	9.19	11.55			AL (NO3)3-9H2O	.46			
	A	P205	15.18	26.56			H3PO4	.76			
	W	NA2O	17.97	13.73							
	W	NIO	1.20	1.10							
	W	AL203	3.00	3.77	15.31						
	W	FE203	5.99	11.80							
	W	CR203	1.20	2.25							
	W	RUO2	0.24	0.39							
	W	P205	0.31	0.52	27.08						
	W	S03	17.97	17.74							
	W	SI02	1.20	0.89							
	W	F	0.60	0.14							
26					1100.	52.33			3.	2.59	2
	A	LI20	25.96	9.56			LI OH-H2O	1.3			
	A	AL203	9.19	11.55			AL (NO3)3-9H2O	.46			
	A	P205	15.18	26.56			H3PO4	.76			
	W	NA2O	17.97	13.73							
	W	NIO	1.20	1.10							
	W	AL203	3.00	3.77	15.31						
	W	FE203	5.99	11.80							
	W	CR203	1.20	2.25							
	W	RUO2	0.24	0.39							
	W	P205	0.30	0.52	27.08						
	W	S03	17.97	17.74							
	W	SI02	1.20	0.89							
	W	F	0.60	0.14							
27					0.	70.57			6.	2.61	2
	A	LI20	16.45	5.95			LI OH-H2O	.60			
	A	AL203	6.03	7.45			AL (NO3)3-9H2O	.22			
	A	P205	9.32	16.02			H3PO4	.34			
	W	NA2O	24.68	18.52							
	W	NIO	1.65	1.49							
	W	AL203	4.11	5.08	12.53						
	W	FE203	8.23	15.91							
	W	CR203	1.65	3.03							
	W	RUO2	0.33	0.53							
	W	P205	0.41	0.71	16.73						
	W	S03	24.68	23.93							
	W	SI02	1.65	1.20							
	W	F	0.82	0.19							
28					1100.	69.20			3.	2.60	2
	A	LI20	20.80	7.78			LI OH-H2O	.80			
	A	AL203	5.72	7.30			AL (NO3)3-9H2O	.22			
	A	P205	8.84	15.71			H3PO4	.34			
	W	NA2O	23.59	18.16							
	W	NIO	1.56	1.46							
	W	AL203	3.90	4.98	12.28						
	W	FE203	7.87	15.60							
	W	CR203	1.56	2.97							
	W	RUO2	0.31	0.52							
	W	P205	0.39	0.69	16.41						
	W	S03	23.39	23.46							
	W	SI02	1.56	1.17							
	W	F	0.78	0.19							
29					950.	60.55			4.	2.58	2
	A	LI20	16.72	5.79			LI OH-H2O	.68			
	A	AL203	5.93	6.97			AL (NO3)3-9H2O	.24			
	A	P205	16.23	26.69			H3PO4	.66			
	W	NA2O	22.13	15.89							
	W	NIO	1.48	1.28							
	W	AL203	3.69	4.36	11.33						
	W	FE203	7.58	13.65							
	W	CR203	1.48	2.60							
	W	RUO2	0.30	0.46							
	W	P205	0.37	0.61	27.30						
	W	S03	22.13	20.53							
	W	SI02	1.48	1.03							
	W	F	0.74	0.16							
30					950.	59.54			4.	2.57	2
	A	LI20	20.62	7.37			LI OH-H2O	.88			
	A	AL203	5.62	6.85			AL (NO3)3-9H2O	.24			
	A	P205	15.47	26.24			H3PO4	.66			
	W	NA2O	21.09	15.62							
	W	NIO	1.41	1.26							
	W	AL203	3.52	4.28	11.14						
	W	FE203	7.03	13.42							
	W	CR203	1.41	2.55							
	W	RUO2	0.28	0.45							
	W	P205	0.35	0.60	26.84						
	W	S03	21.09	20.19							
	W	SI02	1.41	1.01							
	W	F	0.70	0.16							

WASTE STUDIES---GRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
31					900.	45.25			3.	2.58	2
	A	LI20	22.28	7.63			LI OH-H2O	1.2			
	A	AL203	9.28	10.85			AL (NO3)3-9H2O	.50			
	A	P205	22.28	36.26			H3PO4	1.2			
	W	NA20	16.71	11.88							
	W	NI0	1.11	0.95							
	W	AL203	2.78	3.26	14.11						
	W	FE203	5.57	10.20							
	W	CR203	1.11	1.94							
	W	RU02	0.22	0.34							
	W	P205	0.28	0.45	36.72						
	W	S03	16.71	15.34							
	W	SI02	1.11	0.77							
	W	F	0.56	0.12							
32					850.	44.68			3.	2.57	2
	A	LI20	25.06	8.79			LI OH-H2O	1.4			
	A	AL203	8.95	10.72			AL (NO3)3-9H2O	.50			
	A	P205	21.48	35.81			H3PO4	1.2			
	W	NA20	16.11	11.73							
	W	NI0	1.07	0.94							
	W	AL203	2.68	3.22	13.93						
	W	FE203	5.37	10.07							
	W	CR203	1.07	1.92							
	W	RU02	0.21	0.34							
	W	P205	0.27	0.45	36.26						
	W	S03	16.11	15.15							
	W	SI02	1.07	0.76							
	W	F	0.54	0.12							
33					1050.	45.45			5.	2.62	2
	A	LI20	25.06	8.94			LI OH-H2O	1.4			
	A	AL203	12.53	15.26			AL (NO3)3-9H2O	.70			
	A	P205	17.90	30.35			H3PO4	1.0			
	W	NA20	16.11	11.93							
	W	NI0	1.07	0.96							
	W	AL203	2.66	3.27	18.53						
	W	FE203	5.37	10.24							
	W	CR203	1.07	1.95							
	W	RU02	0.21	0.34							
	W	P205	0.27	0.46	30.81						
	W	S03	16.11	15.41							
	W	SI02	1.07	0.77							
	W	F	0.54	0.12							
34					-0.	45.25			6.	2.64	2
	A	LI20	27.65	10.18			LI OH-H2O	1.6			
	A	AL203	13.82	17.37			AL (NO3)3-9H2O	.80			
	A	P205	15.55	27.20			H3PO4	.90			
	W	NA20	15.55	11.88							
	W	NI0	1.04	0.95							
	W	AL203	2.59	3.26	20.62						
	W	FE203	5.18	10.20							
	W	CR203	1.04	1.94							
	W	RU02	0.21	0.34							
	W	P205	0.26	0.45	27.65						
	W	S03	15.55	15.34							
	W	SI02	1.04	0.77							
	W	F	0.52	0.12							
35					-0.	45.06			6.	2.65	2
	A	LI20	30.07	11.40			LI OH-H2O	1.8			
	A	AL203	15.03	19.46			AL (NO3)3-9H2O	.90			
	A	P205	13.36	24.08			H3PO4	.80			
	W	NA20	15.03	11.83							
	W	NI0	1.00	0.95							
	W	AL203	2.51	3.24	22.70						
	W	FE203	5.01	10.16							
	W	CR203	1.00	1.93							
	W	RU02	0.20	0.34							
	W	P205	0.25	0.45	24.53						
	W	S03	15.03	15.28							
	W	SI02	1.00	0.76							
	W	F	0.50	0.12							
36					-0.	33.98			6.	2.67	2
	A	LI20	36.64	14.33			LI OH-H2O	3.0			
	A	AL203	18.32	24.45			AL (NO3)3-9H2O	1.5			
	A	P205	14.66	27.23			H3PO4	1.2			
	W	NA20	10.99	8.92							
	W	NI0	0.73	0.72							
	W	AL203	1.83	2.45	26.90						
	W	FE203	3.66	7.66							
	W	CR203	0.73	1.46							
	W	RU02	0.15	0.26							
	W	P205	0.18	0.34	27.57						
	W	S03	10.99	11.52							
	W	SI02	0.73	0.58							
	W	F	0.37	0.09							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
37					-0.	33.85			6.	2.64	2
	A	LI2O	34.97	13.32			LI OH-H2O	2.8			
	A	AL2O3	16.99	22.08			AL (NO3)3-9H2O	1.4			
	A	P2O5	16.99	30.74			H3PO4	1.4			
	W	NA2O	11.24	8.88							
	W	NI O	0.75	0.71							
	W	AL2O3	1.87	2.44	24.52						
	W	FE2O3	3.75	7.63							
	W	CR2O3	0.75	1.45							
	W	RUO2	0.15	0.25							
	W	P2O5	0.19	0.34	31.08						
	W	SO3	11.24	11.48							
	W	SI02	0.75	0.57							
	W	F	0.37	0.09							
38					1050.	33.95			5.	2.61	2
	A	LI2O	29.54	10.50			LI OH-H2O	2.2			
	A	AL2O3	14.77	17.91			AL (NO3)3-9H2O	1.1			
	A	P2O5	22.29	37.64			H3PO4	1.7			
	W	NA2O	12.09	8.91							
	W	NI O	0.81	0.72							
	W	AL2O3	2.01	2.44	20.36						
	W	FE2O3	4.03	7.65							
	W	CR2O3	0.81	1.46							
	W	RUO2	0.16	0.26							
	W	P2O5	0.20	0.34	37.98						
	W	SO3	12.79	11.51							
	W	SI02	0.81	0.58							
	W	F	0.40	0.09							
39					700.	20.31			3.	2.46	2
	A	LI2O	19.92	6.85			LI OH-H2O	2.4			
	A	NA2O	23.24	16.59			NAOH	2.8			
	A	AL2O3	6.31	7.41			AL (NO3)3-9H2O	0.76			
	A	P2O5	29.88	48.84			H3PO4	3.6			
	W	NA2O	7.47	5.33	21.92						
	W	NI O	0.50	0.43							
	W	AL2O3	1.25	1.46	8.87						
	W	FE2O3	2.49	4.58							
	W	CR2O3	0.57	0.87							
	W	RUO2	0.17	0.15							
	W	P2O5	0.12	0.20	49.04						
	W	SO3	7.47	6.89							
	W	SI02	0.50	0.34							
	W	F	0.25	0.05							
40					950.	21.71			4.	2.45	2
	A	LI2O	24.90	9.16			LI OH-H2O	3.0			
	A	NA2O	23.24	17.73			NAOH	2.8			
	A	AL2O3	6.31	7.91			AL (NO3)3-9H2O	0.76			
	A	P2O5	24.90	43.49			H3PO4	3.0			
	W	NA2O	7.47	5.70	23.42						
	W	NI O	0.50	0.46							
	W	AL2O3	1.25	1.56	9.48						
	W	FE2O3	2.49	4.89							
	W	CR2O3	0.50	0.93							
	W	RUO2	0.10	0.16							
	W	P2O5	0.12	0.22	43.71						
	W	SO3	7.47	7.36							
	W	SI02	0.50	0.37							
	W	F	0.25	0.06							
41					950.	37.11			3.	2.52	2
	A	LI2O	27.33	9.39			LI OH-H2O	1.8			
	A	AL2O3	7.59	8.90			AL (NO3)3-9H2O	0.59			
	A	P2O5	27.33	44.60			H3PO4	1.8			
	W	NA2O	13.66	9.74							
	W	NI O	0.91	0.78							
	W	AL2O3	2.28	2.67	11.57						
	W	FE2O3	4.55	8.36							
	W	CR2O3	0.91	1.59							
	W	RUO2	0.18	0.28							
	W	P2O5	0.23	0.37	44.98						
	W	SO3	13.66	12.58							
	W	SI02	0.91	0.63							
	W	F	0.46	0.10							
42					800.	24.13			3.	2.46	2
	A	NA2O	22.25	15.48			NAOH	2.2			
	A	CAO	24.27	15.28			CA (OH)2	1.2			
	A	P2O5	28.32	45.12			H3PO3	2.9			
	W	NA2O	9.10	6.33	21.81						
	W	NI O	0.61	0.51							
	W	AL2O3	1.52	1.74							
	W	FE2O3	3.73	5.44							
	W	CR2O3	0.61	1.04							
	W	RUO2	0.12	0.18							
	W	P2O5	0.15	0.24	45.36						
	W	SO3	9.10	8.18							
	W	SI02	0.61	0.41							
	W	F	0.30	1.06							

WASTE STUDIES---ORNL

NCTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	T	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. #/L	APP.	CALC. PORE FREE D.	WASTE TYPE
43					850.	14.41			5.	2.42	2
	A	NA2O	15.37	10.09			NAOH	2.4			
	A	CAO	16.57	9.89			CA(OH)2	1.3			
	A	SI02	15.37	9.78			SI02	1.2			
	A	P2O5	36.97	55.83			H3PO3	5.8			
	W	NA2O	5.74	3.78	13.87						
	W	NIO	0.38	0.30							
	W	AL2O3	0.96	1.04							
	W	FE2O3	1.91	3.25							
	W	CR2O3	0.38	0.62							
	W	RU02	0.08	0.11							
	W	P2O5	0.10	0.14	55.98						
	W	SO3	5.74	4.89							
	W	SI02	0.38	0.24	10.02						
	W	F	0.19	0.04							
44					875.	24.05			3.	2.45	2
	A	NA2O	14.94	10.38			NAOH	1.5			
	A	CAO	16.35	10.28			CA(OH)2	.81			
	A	SI02	15.34	10.35			SI02	.76			
	A	P2O5	28.26	44.97			H3PO3	2.9			
	W	NA2O	9.08	6.31	16.69						
	W	NIO	0.61	0.51							
	W	AL2O3	1.51	1.73							
	W	FE2O3	3.03	5.42							
	W	CR2O3	0.61	1.03							
	W	RU02	0.12	0.18							
	W	P2O5	0.15	0.24	45.21						
	W	SO3	9.08	8.15							
	W	SI02	0.61	0.41	10.74						
	W	F	0.30	0.06							
45					1000.	37.60			3.	2.85	2
	A	NA2O	19.98	12.50			NAOH	1.1			
	A	CAO	7.36	4.17			CA(OH)2	.21			
	A	AL2O3	4.21	4.33			AL(NO3)3-9H2O	.24			
	A	PBO	7.01	15.79			PB(NO3)2	.20			
	A	P2O5	17.87	25.61			H3PO3	1.0			
	W	NA2O	15.77	9.87	22.37						
	W	NIO	1.05	0.79							
	W	AL2O3	2.63	2.71	7.03						
	W	FE2O3	5.26	8.48							
	W	CR2O3	1.05	1.61							
	W	RU02	0.21	0.28							
	W	P2O5	0.26	0.38	25.99						
	W	SO3	15.77	12.75							
	W	SI02	1.05	0.64							
	W	F	0.53	0.10							
46					1100.	32.47			5.	3.12	2
	A	NA2O	18.67	10.79			NAOH	1.1			
	A	CAO	6.88	3.60			CA(OH)2	.21			
	A	AL2O3	3.93	3.74			AL(NO3)3-9H2O	.24			
	A	PBO	13.10	27.28			PB(NO3)2	.40			
	A	P2O5	16.70	22.12			H3PO3	1.0			
	W	NA2O	14.74	8.52	19.32						
	W	NIO	0.98	0.68							
	W	AL2O3	2.46	2.34	6.07						
	W	FE2O3	4.91	7.32							
	W	CR2O3	0.98	1.39							
	W	RU02	0.20	0.24							
	W	P2O5	0.25	0.33	22.44						
	W	SO3	14.74	11.01							
	W	SI02	0.98	0.55							
	W	F	0.49	0.09							
47					-0.	28.57			6.	3.37	2
	A	NA2O	17.52	9.50			NAOH	1.1			
	A	CAO	6.45	3.17			CA(OH)2	.21			
	A	AL2O3	3.69	3.29			AL(NO3)3-9H2O	.24			
	A	PBO	18.44	36.01			PB(NO3)2	.60			
	A	P2O5	15.68	19.46			H3PO3	1.0			
	W	NA2O	13.83	7.50	17.00						
	W	NIO	0.92	0.60							
	W	AL2O3	2.31	2.06	5.35						
	W	FE2O3	4.61	6.44							
	W	CR2O3	0.92	1.23							
	W	RU02	0.18	0.21							
	W	P2O5	0.23	0.29	19.75						
	W	SO3	13.83	9.69							
	W	SI02	0.92	0.48							
	W	F	0.46	0.08							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. #/L	APP.	CALC. PORE FREE D.	WASTE TYPE
48					1000.	42.30			3.	2.59	2
	A	NA2O	20.48	14.06			NAOH	1.1			
	A	CAO	7.54	4.69			CA(OH)2	.21			
	A	AL2O3	8.98	10.14			AL(NO3)3-9H2O	.50			
	A	P2O5	18.32	28.81			H3PO3	1.0			
	W	NA2O	16.17	36.64	11.10	25.16					
	W	NI0	1.38	0.89							
	W	AL2O3	2.69	11.68	3.04	13.19					
	W	FE2O3	5.39	9.53							
	W	CR2O3	1.08	1.82							
	W	RUO2	0.22	0.32							
	W	P2O5	0.27	18.59	0.42	29.24					
	W	SO3	16.17	14.34							
	W	SiO2	1.78	0.72							
	W	F	0.54	0.11							
49					1100.	39.87			3.	2.64	2
	A	NA2O	19.43	13.25			NAOH	1.1			
	A	CAO	7.16	4.42			CA(OH)2	.21			
	A	AL2O3	13.64	15.30			AL(NO3)3-9H2O	.80			
	A	P2O5	17.39	27.16			H3PO3	1.0			
	W	NA2O	15.34	34.77	10.46	23.72					
	W	NI0	1.02	0.84							
	W	AL2O3	2.56	16.19	2.87	18.17					
	W	FE2O3	5.11	8.99							
	W	CR2O3	1.02	1.71							
	W	RUO2	0.20	0.30							
	W	P2O5	0.26	17.64	0.40	27.56					
	W	SO3	15.34	13.52							
	W	SiO2	1.02	0.68							
	W	F	0.51	0.11							
50					-0.	38.40			6.	2.68	2
	A	NA2O	18.79	12.77			NAOH	1.1			
	A	CAO	6.92	4.26			CA(OH)2	.21			
	A	AL2O3	16.48	18.42			AL(NO3)3-9H2O	1.0			
	A	P2O5	16.81	26.16			H3PO3	1.0			
	W	NA2O	14.83	33.62	10.08	22.84					
	W	NI0	0.99	0.81							
	W	AL2O3	2.47	18.96	2.76	21.18					
	W	FE2O3	4.94	8.66							
	W	CR2O3	0.99	1.65							
	W	RUO2	0.20	0.29							
	W	P2O5	0.25	17.06	0.38	26.54					
	W	SO3	14.83	13.02							
	W	SiO2	0.99	0.65							
	W	F	0.49	0.10							
51					925.	39.88			5.	2.44	2
	A	NA2O	18.93	13.49			NAOH	.76			
	A	CAO	6.85	4.42			CA(OH)2	.21			
	A	H2O3	13.06	10.45			NA28407-10H2O	.20			
	A	AL2O3	3.92	4.59			AL(NO3)3-9H2O	.12			
	A	P2O5	16.65	27.17			H3PO3	1.0			
	W	NA2O	14.69	33.62	10.47	23.96					
	W	NI0	0.98	0.84							
	W	AL2O3	2.45	6.37	2.87	7.46					
	W	FE2O3	4.90	8.99							
	W	CR2O3	0.98	1.71							
	W	RUO2	0.20	0.30							
	W	P2O5	0.24	16.89	0.40	27.57					
	W	SO3	14.69	13.52							
	W	SiO2	0.98	0.68							
	W	F	0.49	0.11							
52					975.	36.11			4.	2.37	2
	A	NA2O	16.75	12.21			NAOH	.36			
	A	CAO	6.06	4.00			CA(OH)2	.21			
	A	H2O3	23.10	18.93			NA28407-10H2O	.40			
	A	AL2O3	3.46	4.16			AL(NO3)3-9H2O	.12			
	A	P2O5	14.72	24.60			H3PO3	1.0			
	W	NA2O	12.99	29.74	9.48	21.69					
	W	NI0	0.87	0.76							
	W	AL2O3	2.17	5.63	2.60	6.75					
	W	FE2O3	4.33	8.14							
	W	CR2O3	0.87	1.55							
	W	RUO2	0.17	0.27							
	W	P2O5	0.22	14.94	0.36	24.96					
	W	SO3	12.99	12.24							
	W	SiO2	0.87	0.61							
	W	F	0.43	0.10							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
53					1000.	32.86			1.	2.32	2
	A	NA2O	15.45	11.50			NA2B4O7-H2O	.60			
	A	CAO	5.41	3.64			CA(OH)2	.21			
	A	B2O3	30.90	25.84			AL(NO3)3-9H2O	.12			
	A	AL2O3	3.09	3.78			H3PO3	1.0			
	A	P2O5	13.13	22.38							
	W	NA2O	11.59	8.62	20.12						
	W	NI0	0.77	0.69							
	W	AL2O3	1.93	2.36	6.15						
	W	FE2O3	3.86	7.41							
	W	CR2O3	0.77	1.41							
	W	RU02	0.15	0.25							
	W	P2O5	0.19	0.33	22.71						
	W	S03	11.59	11.14							
	W	SI02	0.77	0.56							
	W	F	0.39	0.09							
54					925.	46.34			5.	2.50	2
	A	NA2O	18.48	12.70			NAOH	.12			
	A	CAO	5.50	3.42			CA(OH)2	.14			
	A	B2O3	4.72	3.64			H2O3	.12			
	A	AL2O3	3.15	3.56			AL(NO3)3-9H2O	.16			
	A	P2O5	19.26	30.33			H3PO3	.18			
	W	NA2O	17.69	12.16	24.86		NAH2PO4-H2O	.81			
	W	NI0	1.18	0.98							
	W	AL2O3	2.95	3.33	6.89						
	W	FE2O3	5.90	10.45							
	W	CR2O3	1.18	1.99							
	W	RU02	0.24	0.35							
	W	P2O5	0.29	0.46	30.79						
	W	S03	17.69	15.71							
	W	SI02	1.18	0.79							
	W	F	0.59	0.12							
55					900.	46.34			5.	2.50	2
	A	NA2O	18.48	12.70			NAOH	.12			
	A	CAO	5.50	3.42			CA(OH)2	.14			
	A	B2O3	4.72	3.64			H2O3	.12			
	A	AL2O3	3.15	3.56			AL(NO3)3-9H2O	.16			
	A	P2O5	19.26	30.33			H3PO3	.18			
	W	NA2O	17.69	12.16	24.86		NAH2PO4-H2O	.81			
	W	NI0	1.18	0.98							
	W	AL2O3	2.95	3.33	6.89						
	W	FE2O3	5.90	10.45							
	W	CR2O3	1.18	1.99							
	W	RU02	0.24	0.35							
	W	P2O5	0.29	0.46	30.79						
	W	S03	17.69	15.71							
	W	SI02	1.18	0.79							
	W	F	0.59	0.12							
56					950.	41.61			5.	2.72	2
	A	NA2O	15.31	9.71			NAH2PO4-H2O	.81			
	A	CAO	5.36	3.07			CA(OH)2	.14			
	A	B2O3	4.59	3.27			H2O3	.12			
	A	AL2O3	3.06	3.19			AL(NO3)3-9H2O	.16			
	A	PBO	4.97	11.36			PB(NO3)2	.13			
	A	P2O5	19.13	27.79			H3PO3	.18			
	W	NA2O	17.22	10.92	20.63						
	W	NI0	1.15	0.88							
	W	AL2O3	2.87	2.99	6.19						
	W	FE2O3	5.74	9.38							
	W	CR2O3	1.15	1.79							
	W	RU02	0.23	0.31							
	W	P2O5	0.29	0.42	28.20						
	W	S03	17.22	14.11							
	W	SI02	1.15	0.71							
	W	F	0.57	0.11							
57					900.	37.66			5.	2.90	2
	A	NA2O	14.63	8.78			NAH2PO4-H2O	.81			
	A	CAO	5.12	2.78			CA(OH)2	.14			
	A	B2O3	4.39	2.96			H2O3	.12			
	A	AL2O3	2.93	2.89			AL(NO3)3-9H2O	.16			
	A	PBO	9.15	19.77			PB(NO3)2	.25			
	A	P2O5	18.29	25.15			H3PO3	.18			
	W	NA2O	16.46	9.88	18.67						
	W	NI0	1.10	0.79							
	W	AL2O3	2.74	2.71	5.60						
	W	FE2O3	5.49	8.49							
	W	CR2O3	1.10	1.62							
	W	RU02	0.22	0.28							
	W	P2O5	0.27	0.38	25.53						
	W	S03	16.46	12.77							
	W	SI02	1.10	0.64							
	W	F	0.55	0.10							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
58					975.	44.68			5.	2.53	2
	A	NA2O	17.91	12.25			NAOH	.12			
	A	CAO	5.34	3.30			CA(OH)2	.14			
	A	B2O3	4.57	3.51			B2O3	.12			
	A	AL2O3	5.72	6.43			AL(NO3)3-9H2O	.30			
	A	P2O5	19.06	29.84			H3PO3	.18			
	W	NA2O	17.15	11.72	23.97		NAH2PO4-H2O	.81			
	W	NI0	1.14	0.94							
	W	AL2O3	2.86	3.21	9.64						
	W	FE2O3	5.72	10.07							
	W	CR2O3	1.14	1.92							
	W	RUO2	0.23	0.34							
	W	P2O5	0.29	0.45	30.28						
	W	SO3	17.15	15.15							
	W	SiO2	1.14	0.76							
	W	F	0.57	0.12							
59					950.	40.20			3.	2.54	2
	A	NA2O	19.42	13.13			NAOH	.12			
	A	CAO	4.86	2.97			CA(OH)2	.14			
	A	B2O3	4.16	3.16			B2O3	.12			
	A	AL2O3	7.98	8.87			AL(NO3)3-9H2O	.46			
	A	P2O5	20.46	31.68			H3PO3	.18			
	W	NA2O	15.61	10.55	23.68		NAH2PO2-H2O	1.0			
	W	NI0	1.04	0.85							
	W	AL2O3	2.60	2.89	11.76						
	W	FE2O3	5.20	9.06							
	W	CR2O3	1.04	1.72							
	W	RUO2	0.21	0.30							
	W	P2O5	0.26	0.40	32.08						
	W	SO3	15.61	13.63							
	W	SiO2	1.04	0.68							
	W	F	0.52	0.11							
60					850.	40.02			3.	2.45	2
	A	NA2O	22.79	15.87			NAOH	.12			
	A	CAO	4.69	2.96			CA(OH)2	.14			
	A	B2O3	8.38	6.56			NA2B4O7-10H2O	.12			
	A	AL2O3	2.68	3.07			AL(NO3)3-9H2O	.16			
	A	P2O5	19.78	31.53			H3PO3	.18			
	W	NA2O	15.08	10.50	26.37		NAH2PO2-H2O	1.0			
	W	NI0	1.01	0.84							
	W	AL2O3	2.51	2.88	5.95						
	W	FE2O3	5.03	9.02							
	W	CR2O3	1.01	1.72							
	W	RUO2	0.20	0.30							
	W	P2O5	0.25	0.40	31.93						
	W	SO3	15.08	13.57							
	W	SiO2	1.01	0.68							
	W	F	0.50	0.11							
61					875.	35.98			5.	2.40	2
	A	NA2O	25.63	18.46			NAOH	.25			
	A	CAO	4.08	2.66			CA(OH)2	.14			
	A	B2O3	14.56	11.79			NA2B4O7-10H2O	.25			
	A	AL2O3	2.33	2.76			AL(NO3)3-9H2O	.16			
	A	P2O5	17.18	28.35			H3PO3	.18			
	W	NA2O	13.11	9.44	27.91		NAH2PO2-H2O	1.0			
	W	NI0	0.87	0.76							
	W	AL2O3	2.18	2.59	5.35						
	W	FE2O3	4.37	8.11							
	W	CR2O3	0.67	1.54							
	W	RUO2	0.17	0.27							
	W	P2O5	0.22	0.36	28.71						
	W	SO3	13.11	12.20							
	W	SiO2	0.87	0.61							
	W	F	0.44	0.10							
62					875.	38.21			5.	2.68	2
	A	NA2O	19.56	12.48			NAOH	.12			
	A	CAO	4.89	2.82			CA(OH)2	.14			
	A	B2O3	4.19	3.00			B2O3	.12			
	A	AL2O3	2.79	2.93			AL(NO3)3-9H2O	.16			
	A	PBO	4.54	10.43			PB(NO3)2	.13			
	A	P2O5	27.60	30.11			H3PO3	.18			
	W	NA2O	15.72	10.03	22.51		NAH2PO2-H2O	1.0			
	W	NI0	1.05	0.81							
	W	AL2O3	2.62	2.75	5.68						
	W	FE2O3	5.24	8.61							
	W	CR2O3	1.05	1.64							
	W	RUO2	0.21	0.29							
	W	P2O5	0.26	0.38	30.50						
	W	SO3	15.72	12.96							
	W	SiO2	1.05	0.65							
	W	F	0.52	0.10							

WASTE STUDIES---ORNL

NOTE---UNLDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
63					875.	36.37			5.	2.63	2
	A	NA2O	21.84	14.31			NAOH	.12			
	A	CAO	4.50	2.66			CA(OH)2	.14			
	A	B2O3	8.33	5.91			NA2B4O7-10H2O	.13			
	A	AL2O3	2.57	2.77			AL(NO3)3-9H2O	.16			
	A	P8O	4.18	9.85			P8(NO3)2	.13			
	A	P2O5	18.95	28.43			H3PO3	.18			
	W	NA2O	14.45	36.29	23.77		NAH2PO2-H2O	1.0			
	W	NIO	7.96	0.76							
	W	AL2O3	2.41	4.98	5.36						
	W	FE2O3	4.82	8.13							
	W	CR2O3	0.96	1.55							
	W	RUO2	0.19	0.27							
	W	P2O5	0.24	19.19	28.79						
	W	S03	14.45	12.23							
	W	SI02	7.96	7.61							
	W	F	0.48	0.10							
64					750.	45.57			5.	2.48	2
	A	LI2O	22.47	8.77			LI OH-H2O	1.3			
	A	CAO	4.99	3.37			CA(OH)2	.14			
	A	B2O3	4.28	3.58			B2O3	.12			
	A	AL2O3	2.85	3.50			AL(NO3)3-9H2O	.16			
	A	P2O5	21.35	35.91			H3PO3	1.2			
	W	NA2O	16.05	11.96							
	W	NIO	1.07	7.96							
	W	AL2O3	2.68	5.53	6.78						
	W	FE2O3	5.35	10.27							
	W	CR2O3	1.07	1.96							
	W	RUO2	7.21	0.34							
	W	P2O5	7.27	21.31	36.37						
	W	S03	16.05	15.45							
	W	SI02	1.07	0.77							
	W	F	0.54	0.12							
65					800.	37.27			3.	2.87	2
	A	LI2O	17.10	5.24			LI OH-H2O	1.0			
	A	CAO	4.79	2.75			CA(OH)2	.14			
	A	B2O3	4.10	2.93			B2O3	.12			
	A	AL2O3	2.74	2.86			AL(NO3)3-9H2O	.16			
	A	P8O	8.55	19.57			P8(NO3)2	.25			
	A	P2O5	23.18	29.37			H3PO3	1.2			
	W	NA2O	15.39	9.78							
	W	NIO	1.03	0.79							
	W	AL2O3	2.57	5.30	5.54						
	W	FE2O3	5.13	8.40							
	W	CR2O3	1.03	1.60							
	W	RUO2	0.21	0.28							
	W	P2O5	0.26	20.44	29.75						
	W	S03	15.39	12.64							
	W	SI02	1.03	0.63							
	W	F	0.51	0.10							
66					800.	42.92			5.	2.44	2
	A	LI2O	18.77	6.76			LI OH-H2O	1.1			
	A	NA2O	4.72	3.00			NA2B4O7-10H2O	.12			
	A	CAO	4.69	3.17			CA(OH)2	.14			
	A	B2O3	8.38	7.03			AL(NO3)3-9H2O	.16			
	A	AL2O3	2.68	3.29			H3PO3	1.2			
	A	P2O5	19.78	33.82							
	W	NA2O	15.08	11.26	14.27						
	W	NIO	1.01	0.91							
	W	AL2O3	2.51	5.20	6.38						
	W	FE2O3	5.73	9.67							
	W	CR2O3	1.01	1.84							
	W	RUO2	0.20	0.32							
	W	P2O5	0.25	20.03	34.25						
	W	S03	15.08	14.55							
	W	SI02	1.01	0.73							
	W	F	0.50	0.12							
67					800.	38.62			5.	2.39	2
	A	LI2O	18.35	6.84			LI OH-H2O	1.3			
	A	NA2O	7.28	5.63			NA2B4O7-10H2O	.25			
	A	CAO	4.08	2.85			CA(OH)2	.14			
	A	B2O3	14.56	12.65			AL(NO3)3-9H2O	.16			
	A	AL2O3	2.33	2.96			H3PO3	1.2			
	A	P2O5	17.18	30.44							
	W	NA2O	13.11	10.14	15.77						
	W	NIO	0.87	0.81							
	W	AL2O3	2.18	4.51	5.74						
	W	FE2O3	4.37	8.71							
	W	CR2O3	0.87	1.66							
	W	RUO2	0.17	0.29							
	W	P2O5	0.22	17.40	30.82						
	W	S03	13.11	13.09							
	W	SI02	0.87	0.66							
	W	F	0.44	0.10							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
68					800.	40.85			5.	2.69	2
	A	LI2O	19.56	6.43			LI OH-H2O	1.1			
	A	CAO	4.89	3.02			CA (OH)2	.14			
	A	B2O3	4.19	3.21			H2O3	.12			
	A	AL2O3	2.79	3.14			AL (NO3)3-9H2O	.16			
	A	PBO	4.54	11.15			PB (NO3)2	.13			
	A	P2O5	20.60	32.19			H3PO3	1.2			
	W	NA2O	15.72	10.72							
	W	NIO	1.05	3.86							
	W	AL2O3	2.62	2.94	6.08						
	W	FE2O3	5.24	9.21							
	W	CR2O3	1.05	1.75							
	W	RUO2	0.21	0.31							
	W	P2O5	0.26	0.41	32.60						
	W	S03	15.72	15.85							
	W	SI02	1.05	0.69							
	W	F	0.52	0.11							
69					750.	38.42			5.	2.63	2
	A	LI2O	17.99	6.05			LI OH-H2O	1.1			
	A	NA2O	3.85	2.69			NA2B4O7-10H2O	.12			
	A	CAO	4.53	2.84			CA (OH)2	.14			
	A	B2O3	8.33	6.29			AL (NO3)3-9H2O	.16			
	A	AL2O3	2.57	2.95			PB (NO3)2	.13			
	A	PBO	4.18	10.49			H3PO3	1.2			
	A	P2O5	18.95	30.27							
	W	NA2O	14.45	10.08	12.77						
	W	NIO	0.96	0.81							
	W	AL2O3	2.41	2.76	5.71						
	W	FE2O3	4.82	8.66							
	W	CR2O3	0.96	1.65							
	W	RUO2	0.19	0.29							
	W	P2O5	0.24	0.38	30.66						
	W	S03	14.45	13.02							
	W	SI02	0.96	0.65							
	W	F	0.48	0.10							
70					800.	33.66			3.	2.40	2
	A	NA2O	7.28	4.91			NA2B4O7-10H2O	.25			
	A	K2O	18.35	18.80			KN03	1.3			
	A	CAO	4.78	2.49			CA (NO3)2-4H2O	.14			
	A	B2O3	14.56	11.03			AL (NO3)3-9H2O	.16			
	A	AL2O3	2.33	2.58			H3PO3	1.2			
	A	P2O5	17.18	26.53							
	W	NA2O	13.11	8.83	13.74						
	W	NIO	0.87	0.71							
	W	AL2O3	2.18	2.42	5.01						
	W	FE2O3	4.37	7.59							
	W	CR2O3	0.87	1.44							
	W	RUO2	0.17	0.25							
	W	P2O5	0.22	0.34	26.87						
	W	S03	13.11	11.41							
	W	SI02	0.87	0.57							
	W	F	0.44	0.09							
71					850.	35.88			3.	2.66	2
	A	K2O	19.56	17.81			KN03	1.1			
	A	CAO	4.89	2.65			CA (NO3)2-4H2O	.14			
	A	B2O3	4.19	2.82			B2O3	.12			
	A	AL2O3	2.79	2.75			AL (NO3)3-9H2O	.16			
	A	PBO	4.54	9.80			PB (NO3)2	.13			
	A	P2O5	20.60	28.28			H3PO3	1.2			
	W	NA2O	15.72	9.42							
	W	NIO	1.05	0.76							
	W	AL2O3	2.62	2.58	5.34						
	W	FE2O3	5.24	8.09							
	W	CR2O3	1.05	1.54							
	W	RUO2	0.21	0.27							
	W	P2O5	0.26	0.36	28.64						
	W	S03	15.72	12.17							
	W	SI02	1.05	0.61							
	W	F	0.52	0.10							
72					850.	33.99			3.	2.62	2
	A	NA2O	3.85	2.38			NA2B4O7-10H2O	.12			
	A	K2O	17.99	16.87			KN03	1.1			
	A	CAO	4.50	2.51			CA (NO3)2-4H2O	.14			
	A	B2O3	8.33	5.57			AL (NO3)3-9H2O	.16			
	A	AL2O3	2.57	2.61			PB (NO3)2	.13			
	A	PBO	4.18	9.28			H3PO3	1.2			
	A	P2O5	18.95	26.79							
	W	NA2O	14.45	8.92	11.30						
	W	NIO	0.96	0.72							
	W	AL2O3	2.41	2.45	5.05						
	W	FE2O3	4.82	7.66							
	W	CR2O3	0.96	1.46							
	W	RUO2	0.19	0.26							
	W	P2O5	0.24	0.34	27.13						
	W	S03	14.45	11.52							
	W	SI02	0.96	0.58							
	W	F	0.48	0.09							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
73					850.	45.62			3.	2.59	2
	A	Li2O	20.48	7.31			LiOH-H2O	1.1			
	A	CaO	7.54	5.06			Ca (NO3)2-4H2O	.21			
	A	Al2O3	8.98	10.94			Al (NO3)3-9H2O	.50			
	A	P2O5	18.32	31.07			H3PO3	1.0			
	W	Na2O	16.17	11.97							
	W	NiO	1.08	0.96							
	W	Al2O3	2.69	3.28	14.22						
	W	Fe2O3	5.39	10.28							
	W	Cr2O3	1.08	1.96							
	W	RuO2	0.22	0.34							
	W	P2O5	0.27	0.46	31.53						
	W	SO3	16.17	15.47							
	W	SiO2	1.78	0.77							
	W	F	0.54	0.12							
74					950.	26.02			3.	2.56	2
	A	Li2O	26.40	9.51			LiOH-H2O	2.6			
	A	Na2O	14.22	10.62			NaOH	1.4			
	A	Al2O3	10.16	12.48			Al (NO3)3-9H2O	1.0			
	A	Fe2O3	1.62	3.13			Fe (NO3)3-9H2O	.16			
	A	P2O5	22.34	38.23			H3PO4	2.3			
	W	Na2O	9.14	6.83	17.45						
	W	NiO	0.61	0.55							
	W	Al2O3	1.52	1.87	14.35						
	W	Fe2O3	3.05	5.87	8.99						
	W	Cr2O3	0.61	1.12							
	W	RuO2	0.12	0.20							
	W	P2O5	0.15	0.26	38.49						
	W	SO3	9.14	8.82							
	W	SiO2	0.61	0.44							
	W	F	0.30	0.07							
75					950.	26.86			3.	2.52	2
	A	Li2O	26.84	9.82			LiOH-H2O	2.6			
	A	Na2O	14.45	10.97			NaOH	1.4			
	A	Al2O3	10.32	12.89			Al (NO3)3-9H2O	1.0			
	A	P2O5	22.71	39.47			H3PO4	2.3			
	W	Na2O	9.29	7.05	18.02						
	W	NiO	0.62	0.57							
	W	Al2O3	1.55	1.93	14.82						
	W	Fe2O3	3.10	6.05							
	W	Cr2O3	0.62	1.15							
	W	RuO2	0.12	0.20							
	W	P2O5	0.15	0.27	39.74						
	W	SO3	9.29	9.11							
	W	SiO2	0.62	0.46							
	W	F	0.31	0.07							
76					875.	37.60			3.	2.37	2
	A	Li2O	23.89	9.30			LiOH-H2O	1.8			
	A	Na2O	6.79	5.48			Na2B4O7-10H2O	.25			
	A	CaO	3.80	2.78			Ca (NO3)2-4H2O	.14			
	A	B2O3	13.57	12.32			Al (NO3)3-9H2O	.15			
	A	Al2O3	2.17	2.89			H3PO3	1.2			
	A	P2O5	16.02	29.63							
	W	Na2O	12.22	9.87	15.35						
	W	NiO	0.81	0.79							
	W	Al2O3	2.04	2.71	5.59						
	W	Fe2O3	4.07	8.48							
	W	Cr2O3	0.81	1.61							
	W	RuO2	0.16	0.28							
	W	P2O5	0.20	0.38	30.01						
	W	SO3	12.22	12.75							
	W	SiO2	0.81	0.64							
	W	F	0.41	0.10							
77					850.	37.13			3.	2.37	2
	A	Li2O	26.29	10.44			LiOH-H2O	2.0			
	A	Na2O	6.57	5.41			Na2B4O7-10H2O	.25			
	A	CaO	3.68	2.74			Ca (NO3)2-4H2O	.14			
	A	B2O3	13.15	12.17			Al (NO3)3-9H2O	.15			
	A	Al2O3	2.10	2.85			H3PO3	1.2			
	A	P2O5	15.51	29.26							
	W	Na2O	11.83	9.74	15.16						
	W	NiO	0.79	0.78							
	W	Al2O3	1.97	2.67	5.52						
	W	Fe2O3	3.94	8.37							
	W	Cr2O3	0.79	1.59							
	W	RuO2	0.16	0.28							
	W	P2O5	0.20	0.37	29.63						
	W	SO3	11.83	12.59							
	W	SiO2	0.79	0.63							
	W	F	0.39	0.10							

WASTE STUDIES---GRNL

NOTE---UNCER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
78					1100.	45.69			5.	2.50	2
	A	NA2O	19.35	13.32			NAH2PO2-H2O	1.0			
	A	CAO	5.42	3.38			CA (NO3)2-4H2O	.14			
	A	B2O3	4.64	3.59			B2O3	.12			
	A	AL2O3	3.10	3.51			AL (NO3)3-9H2O	.15			
	A	P2O5	19.35	30.51							
	W	NA2O	17.42	36.77	11.99	25.31					
	W	NIO	1.16	0.96							
	W	AL2O3	2.90	6.00	3.29	6.79					
	W	FE2O3	5.81	17.30							
	W	CR2O3	1.16	1.96							
	W	RUO2	0.23	0.34							
	W	P2O5	0.29	19.64	0.46	30.97					
	W	SO3	17.42	15.49							
	W	SiO2	1.16	0.77							
	W	F	0.58	0.12							
79					950.	40.94			3.	2.48	2
	A	NA2O	18.03	11.94			NAH2PO2-H2O	1.0			
	A	CAO	5.05	3.02			CA (NO3)2-4H2O	.14			
	A	B2O3	4.33	3.22			B2O3	.12			
	A	AL2O3	2.88	3.14			AL (NO3)3-9H2O	.15			
	A	P2O5	24.88	37.73			H3PO3	.37			
	W	NA2O	16.22	34.25	10.74	22.68					
	W	NIO	1.08	0.86							
	W	AL2O3	2.70	5.59	2.95	6.09					
	W	FE2O3	5.41	9.23							
	W	CR2O3	1.08	1.76							
	W	RUO2	0.22	0.31							
	W	P2O5	0.27	25.15	0.41	38.14					
	W	SO3	16.22	13.88							
	W	SiO2	1.08	0.69							
	W	F	0.54	0.11							
80					950.	43.31			3.	2.49	2
	A	NA2O	18.70	12.63			NAH2PO2-H2O	1.0			
	A	CAO	5.24	3.20			CA (NO3)2-4H2O	.14			
	A	B2O3	4.49	3.41			B2O3	.12			
	A	AL2O3	2.99	3.32			AL (NO3)3-9H2O	.15			
	A	P2O5	22.07	34.13			H3PO3	.18			
	W	NA2O	16.85	35.53	11.37	24.00					
	W	NIO	1.12	0.91							
	W	AL2O3	2.81	5.80	3.12	6.44					
	W	FE2O3	5.61	9.76							
	W	CR2O3	1.12	1.86							
	W	RUO2	0.22	0.33							
	W	P2O5	0.28	22.35	0.43	34.56					
	W	SO3	16.83	14.68							
	W	SiO2	1.12	0.73							
	W	F	0.56	0.12							
81					950.	14.42			3.	2.44	1
	A	NA2O	22.69	15.14			NAOH	1.2			
	A	CAO	25.71	15.53			CA (OH)2	.68			
	A	P2O5	35.92	54.91			H3PO3	1.9			
	W	NA2O	5.67	28.36	3.79	18.93					
	W	NIO	0.38	0.30							
	W	AL2O3	0.95	1.04							
	W	FE2O3	1.89	3.25							
	W	CR2O3	0.38	0.62							
	W	RUO2	0.08	0.11							
	W	P2O5	0.09	36.02	0.14	55.05					
	W	SO3	5.67	4.89							
	W	SiO2	0.38	0.24							
	W	F	0.19	0.04							
82					900.	18.53			3.	2.45	1
	A	NA2O	21.21	14.26			NAOH	.88			
	A	CAO	25.07	15.25			CA (OH)2	.52			
	A	P2O5	33.74	51.96			H3PO3	1.4			
	W	NA2O	7.23	28.44	4.86	19.12					
	W	NIO	0.48	0.39							
	W	AL2O3	1.21	1.33							
	W	FE2O3	2.41	4.18							
	W	CR2O3	0.48	0.79							
	W	RUO2	0.10	0.14							
	W	P2O5	0.12	33.86	0.19	52.15					
	W	SO3	7.23	6.28							
	W	SiO2	0.48	0.31							
	W	F	0.24	0.05							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
83					900.	23.89			4.	2.46	I
	A	NA2O	21.76	15.05			NAOH	.72			
	A	CAO	24.18	15.13			CA(OH)2	.40			
	A	P2O5	29.01	45.94			H3PO3	.96			
	W	NA2O	9.07	30.83	21.31						
	W	NI0	7.60	0.50							
	W	AL2O3	1.51	1.72							
	W	FE2O3	3.02	5.38							
	W	CR2O3	0.60	1.03							
	W	RU02	0.12	0.18							
	W	P2O5	0.15	29.16	46.18						
	W	S03	9.07	8.10							
	W	SI02	0.60	0.41							
	W	F	0.30	0.06							
84					-0.	28.84			6.	2.47	I
	A	NA2O	22.07	15.64			NAOH	.62			
	A	CAO	23.50	15.37			CA(OH)2	.66			
	A	P2O5	24.92	40.45			H3PO3	.70			
	W	NA2O	10.68	32.75	23.21						
	W	NI0	0.71	0.61							
	W	AL2O3	1.78	2.08							
	W	FE2O3	3.56	6.50							
	W	CR2O3	0.71	1.24							
	W	RU02	0.14	0.22							
	W	P2O5	0.18	25.10	40.74						
	W	S03	10.68	9.78							
	W	SI02	0.71	0.49							
	W	F	0.36	0.08							
85					-0.	33.38			6.	2.48	I
	A	NA2O	21.06	15.18			NAOH	.52			
	A	CAO	23.49	15.32			CA(OH)2	.58			
	A	P2O5	21.87	36.11			H3PO3	.54			
	W	NA2O	12.15	33.21	23.94						
	W	NI0	0.81	0.70							
	W	AL2O3	2.03	2.40							
	W	FE2O3	4.05	7.52							
	W	CR2O3	0.81	1.43							
	W	RU02	0.16	0.25							
	W	P2O5	0.20	22.07	36.45						
	W	S03	12.15	11.32							
	W	SI02	0.81	0.57							
	W	F	0.41	0.09							
86					-0.	38.47			6.	2.49	I
	A	NA2O	21.01	15.48			NAOH	.46			
	A	CAO	22.84	15.22			CA(OH)2	.25			
	A	P2O5	18.27	30.83			H3PO3	.40			
	W	NA2O	13.70	34.72	25.58						
	W	NI0	0.91	0.81							
	W	AL2O3	2.28	2.77							
	W	FE2O3	4.57	8.67							
	W	CR2O3	0.91	1.65							
	W	RU02	0.18	0.29							
	W	P2O5	0.23	18.50	31.21						
	W	S03	13.70	13.04							
	W	SI02	0.91	0.65							
	W	F	0.46	0.10							
87					900.	14.39			1.	2.42	I
	A	NA2O	15.13	10.07			NAOH	.80			
	A	CAO	16.64	10.02			CA(OH)2	.44			
	A	SI02	16.64	10.74			SI02	.44			
	A	P2O5	35.92	54.78			H3PO3	1.9			
	W	NA2O	5.67	20.80	13.85						
	W	NI0	7.38	0.30							
	W	AL2O3	0.95	1.04							
	W	FE2O3	1.89	3.24							
	W	CR2O3	0.38	0.62							
	W	RU02	0.08	0.11							
	W	P2O5	0.09	36.02	54.92						
	W	S03	5.67	4.88							
	W	SI02	0.38	0.24	10.98						
	W	F	0.19	0.04							
88					1000.	23.74			4.	2.44	I
	A	NA2O	15.02	10.38			NAOH	.50			
	A	CAO	16.22	10.15			CA(OH)2	.27			
	A	SI02	15.02	10.07			SI02	.25			
	A	P2O5	28.84	45.66			H3PO3	.96			
	W	NA2O	9.01	24.03	16.61						
	W	NI0	7.60	0.50							
	W	AL2O3	1.50	1.71							
	W	FE2O3	3.00	5.35							
	W	CR2O3	0.60	1.02							
	W	RU02	0.12	0.18							
	W	P2O5	0.15	28.99	45.90						
	W	S03	9.01	8.05							
	W	SI02	0.60	0.40	10.47						
	W	F	0.30	0.06							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W ₀	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
89					900.	42.20			5.	2.44	I
	A	NA2O	24.88	17.72			NAOH	.41			
	A	CAO	7.26	4.68			CA(OH) ₂	.07			
	A	B2O3	6.22	4.98			NA2B4O7-10H2O	.03			
	A	P2O5	18.66	30.43			H3PO3	.36			
	W	NA2O	15.55	11.07	28.79						
	W	NI0	1.04	0.89							
	W	AL2O3	2.59	3.04							
	W	FE2O3	5.18	9.51							
	W	CR2O3	1.04	1.81							
	W	RUO2	0.21	0.32							
	W	P2O5	0.26	0.42	30.86						
	W	S03	15.55	14.31							
	W	SI02	1.04	0.72							
	W	F	0.52	0.11							
90					950.	42.14			5.	2.47	I
	A	NA2O	24.13	17.70			NAOH	.41			
	A	MGO	10.06	4.83			MGO	.10			
	A	B2O3	6.03	4.97			NA2B4O7-10H2O	.03			
	A	P2O5	18.10	30.40			H3PO3	.36			
	W	NA2O	15.08	11.06	28.76						
	W	NI0	1.01	0.89							
	W	AL2O3	2.51	3.03							
	W	FE2O3	5.03	9.50							
	W	CR2O3	1.01	1.81							
	W	RUO2	0.20	0.32							
	W	P2O5	0.25	0.42	30.82						
	W	S03	15.08	14.29							
	W	SI02	1.01	0.71							
	W	F	0.50	0.11							
91					950.	42.43			5.	2.46	I
	A	NA2O	23.85	17.07			NAOH	.41			
	A	CAO	11.40	7.39			CA(OH) ₂	.11			
	A	B2O3	3.11	2.50			NA2B4O7-10H2O	.02			
	A	P2O5	18.66	30.60			H3PO3	.36			
	W	NA2O	15.55	11.14	28.21						
	W	NI0	1.04	0.89							
	W	AL2O3	2.59	3.05							
	W	FE2O3	5.18	9.56							
	W	CR2O3	1.04	1.82							
	W	RUO2	0.21	0.32							
	W	P2O5	0.26	0.43	31.03						
	W	S03	15.55	14.39							
	W	SI02	1.04	0.72							
	W	F	0.52	0.11							
92					1000.	42.49			5.	2.51	I
	A	NA2O	22.90	17.10			NAOH	.41			
	A	MGO	14.93	7.25			MGO	.15			
	A	B2O3	2.99	2.51			NA2B4O7-10H2O	.02			
	A	P2O5	17.92	30.65			H3PO3	.36			
	W	NA2O	14.93	11.15	28.25						
	W	NI0	1.00	0.90							
	W	AL2O3	2.49	3.06							
	W	FE2O3	4.98	9.58							
	W	CR2O3	1.00	1.82							
	W	RUO2	0.20	0.32							
	W	P2O5	0.25	0.43	31.07						
	W	S03	14.93	14.41							
	W	SI02	1.00	0.72							
	W	F	0.50	0.11							
93					1000.	42.42			5.	2.49	I
	A	NA2O	23.36	17.07			NAOH	.41			
	A	MGO	7.11	3.38			MGO	.07			
	A	CAO	6.09	4.03			CA(OH) ₂	.06			
	A	B2O3	3.05	2.50			NA2B4O7-10H2O	.02			
	A	P2O5	18.28	30.60			H3PO3	.36			
	W	NA2O	15.24	11.13	28.20						
	W	NI0	1.02	0.89							
	W	AL2O3	2.54	3.05							
	W	FE2O3	5.08	9.56							
	W	CR2O3	1.02	1.82							
	W	RUO2	0.20	0.32							
	W	P2O5	0.25	0.42	31.02						
	W	S03	15.24	14.38							
	W	SI02	1.02	0.72							
	W	F	0.51	0.11							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
94					1000.	42.03			5.	2.45	1
	A	NA2O	24.38	17.65			NAOH	.41			
	A	MGO	5.08	2.39			MGO	.25			
	A	CAO	4.06	2.66			CA(OH)2	.04			
	A	B2O3	6.09	4.96			NA2B4O7-10H2O	.03			
	A	P2O5	18.28	30.31			H3PO3	.36			
	W	NA2O	15.24	39.61	28.68						
	W	NIO	1.02	0.89							
	W	AL2O3	2.54	3.02							
	W	FE2O3	5.08	9.47							
	W	CR2O3	1.32	1.80							
	W	RUO2	0.20	0.32							
	W	P2O5	0.25	0.42	30.73						
	W	SO3	15.24	14.25							
	W	SiO2	1.32	0.71							
	W	F	0.51	0.11							
95					900.	16.83			1.	2.37	1
	A	NA2O	18.99	12.66			NAOH	.60			
	A	CAO	17.66	10.66			CA(OH)2	.40			
	A	B2O3	11.48	8.60			NA2B4O7-10H2O	.13			
	A	P2O5	33.56	51.25			H3PO3	1.5			
	W	NA2O	6.62	4.42	17.08						
	W	NIO	0.44	0.35							
	W	AL2O3	1.10	1.21							
	W	FE2O3	2.21	3.79							
	W	CR2O3	0.44	0.72							
	W	RUO2	0.39	0.13							
	W	P2O5	0.11	0.17	51.42						
	W	SO3	6.62	5.71							
	W	SiO2	0.44	0.29							
	W	F	0.22	0.05							
96					1000.	19.22			5.	2.45	1
	A	NA2O	16.00	10.09			NAOH	.60			
	A	CAO	21.34	12.17			CA(OH)2	.40			
	A	P2O5	40.54	58.53			H3PO3	1.5			
	W	NA2O	8.00	5.04	15.13						
	W	NIO	0.53	0.41							
	W	AL2O3	1.33	1.38							
	W	FE2O3	2.67	4.33							
	W	CR2O3	0.53	0.82							
	W	RUO2	0.11	0.14							
	W	P2O5	0.13	0.19	58.72						
	W	SO3	8.00	6.52							
	W	SiO2	0.53	0.33							
	W	F	0.27	0.05							
97					900.	20.58			3.	2.37	1
	A	NA2O	21.56	15.48			NAOH	.60			
	A	CAO	20.06	13.03			CA(OH)2	.40			
	A	B2O3	13.04	10.52			NA2B4O7-10H2O	.13			
	A	P2O5	24.57	40.40			H3PO3	.98			
	W	NA2O	7.52	5.40	20.88						
	W	NIO	0.50	0.43							
	W	AL2O3	1.25	1.48							
	W	FE2O3	2.51	4.64							
	W	CR2O3	0.50	0.88							
	W	RUO2	0.10	0.15							
	W	P2O5	0.13	0.21	40.61						
	W	SO3	7.52	6.98							
	W	SiO2	0.50	0.35							
	W	F	0.25	0.06							
98					1150.	22.01			3.	4.05	1
	A	NA2O	8.51	3.85			NAOH	.20			
	A	CAO	6.81	2.79			CA(OH)2	.08			
	A	PBO	34.76	55.47			PBO	.40			
	A	P2O5	15.33	15.88			H3PO3	.36			
	W	NA2O	12.77	5.78	9.63						
	W	NIO	0.85	0.46							
	W	AL2O3	2.13	1.58							
	W	FE2O3	4.26	4.96							
	W	CR2O3	0.85	0.94							
	W	RUO2	0.17	0.17							
	W	P2O5	0.21	0.22	16.10						
	W	SO3	12.77	7.46							
	W	SiO2	0.85	0.37							
	W	F	0.43	0.06							
99					950.	44.65			3.	2.54	1
	A	NA2O	21.48	14.84			NAOH	.38			
	A	CAO	7.91	4.95			CA(OH)2	.07			
	A	AL2O3	4.52	5.14			AL(NO3)3-9H2O	.08			
	A	P2O5	19.22	30.42			H3PO3	.34			
	W	NA2O	16.96	11.72	26.56						
	W	NIO	1.13	0.94							
	W	AL2O3	2.83	3.21	8.35						
	W	FE2O3	5.65	10.06							
	W	CR2O3	1.13	1.92							
	W	RUO2	0.23	0.34							
	W	P2O5	0.28	0.45	30.86						
	W	SO3	16.96	15.14							
	W	SiO2	1.13	0.76							
	W	F	0.57	0.12							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
100					1000.	47.07			5.	2.49	I
	A	NA2O	22.53	15.65			NAOH	.38			
	A	CAO	8.29	5.22			CA(OH)2	.07			
	A	P2O5	23.13	32.06			H3PO3	.34			
	W	NA2O	17.76	12.35	28.00						
	W	NI0	1.18	0.99							
	W	AL2O3	2.96	3.39							
	W	FE2O3	5.92	10.61							
	W	CR2O3	1.18	2.02							
	W	RUO2	0.24	0.35							
	W	P2O5	0.30	0.47	32.54						
	W	SO3	17.76	15.96							
	W	SI02	1.18	0.80							
	W	F	0.59	0.13							
101					1000.	44.68			5.	2.53	I
	A	NA2O	23.12	14.85			NAOH	.38			
	A	MGO	10.59	5.09			MGO	.10			
	A	CAO	7.41	4.95			CA(OH)2	.07			
	A	P2O5	18.00	30.43			H3PO3	.34			
	W	NA2O	15.88	11.73	26.58						
	W	NI0	1.06	0.94							
	W	AL2O3	2.65	3.21							
	W	FE2O3	5.29	10.07							
	W	CR2O3	1.06	1.92							
	W	RUO2	0.21	0.34							
	W	P2O5	0.26	0.45	30.88						
	W	SO3	15.88	15.15							
	W	SI02	1.06	0.76							
	W	F	0.53	0.12							
102					975.	44.62			3.	2.57	I
	A	NA2O	19.50	14.83			NAOH	.38			
	A	MGO	23.52	10.16			MGO	.20			
	A	P2O5	17.44	30.39			H3PO3	.34			
	W	NA2O	15.39	11.71	26.54						
	W	NI0	1.03	0.94							
	W	AL2O3	2.57	3.21							
	W	FE2O3	5.13	10.06							
	W	CR2O3	1.03	1.91							
	W	RUO2	0.21	0.34							
	W	P2O5	0.26	0.45	30.84						
	W	SO3	15.39	15.13							
	W	SI02	1.03	0.76							
	W	F	0.51	0.12							
103					950.	44.59			3.	2.58	I
	A	NA2O	20.78	14.82			NAOH	.38			
	A	MGO	10.93	5.08			MGO	.10			
	A	AL2O3	4.37	5.13			AL(NO3)3-9H2O	.08			
	A	P2O5	18.59	30.38			H3PO3	.34			
	W	NA2O	16.40	11.70	26.53						
	W	NI0	1.09	0.94							
	W	AL2O3	2.73	3.21	8.34						
	W	FE2O3	5.47	10.05							
	W	CR2O3	1.09	1.91							
	W	RUO2	0.22	0.34							
	W	P2O5	0.27	0.45	30.82						
	W	SO3	16.40	15.12							
	W	SI02	1.09	0.76							
	W	F	0.55	0.12							
104					1100.	44.62			3.	2.52	I
	A	NA2O	14.06	10.15			NAOH	.26			
	A	CAO	22.71	14.83			CA(OH)2	.21			
	A	P2O5	18.39	30.40			H3PO3	.34			
	W	NA2O	16.22	11.71	21.86						
	W	NI0	1.08	0.94							
	W	AL2O3	2.70	3.21							
	W	FE2O3	5.41	10.06							
	W	CR2O3	1.08	1.91							
	W	RUO2	0.22	0.34							
	W	P2O5	0.27	0.45	30.84						
	W	SO3	16.22	15.13							
	W	SI02	1.08	0.76							
	W	F	0.54	0.12							
105					1100.	44.56			3.	2.55	I
	A	NA2O	13.62	10.14			NAOH	.26			
	A	MGO	10.48	5.07			MGO	.10			
	A	CAO	14.67	9.88			CA(OH)2	.14			
	A	P2O5	17.81	30.35			H3PO3	.34			
	W	NA2O	15.72	11.69	21.83						
	W	NI0	1.05	0.94							
	W	AL2O3	2.62	3.21							
	W	FE2O3	5.24	10.04							
	W	CR2O3	1.05	1.91							
	W	RUO2	0.21	0.33							
	W	P2O5	0.26	0.45	30.80						
	W	SO3	15.72	15.11							
	W	SI02	1.05	0.76							
	W	F	0.52	0.12							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
106					1050.	44.50			3.	2.59	1
	A	NA2O	13.20	10.12			NAOH	.26			
	A	MGO	20.31	10.13			MGO	.20			
	A	CAO	7.11	4.93			CA(OH)2	.07			
	A	P2O5	17.27	30.31			H3PO3	.34			
	W	NA2O	15.24	11.68	21.80						
	W	NI0	1.02	0.94							
	W	AL2O3	2.54	3.20							
	W	FE2O3	5.08	10.03							
	W	CR2O3	1.02	1.91							
	W	RUO2	0.20	0.33							
	W	P2O5	0.25	0.45	30.76						
	W	S03	15.24	15.09							
	W	SiO2	1.02	0.75							
	W	F	0.51	0.12							
107					1050.	44.44			5.	2.62	1
	A	NA2O	12.81	10.11			NAOH	.26			
	A	MGO	29.57	15.17			MGO	.30			
	A	P2O5	16.76	30.27			H3PO3	.34			
	W	NA2O	14.79	11.66	21.77						
	W	NI0	0.99	0.94							
	W	AL2O3	2.46	3.20							
	W	FE2O3	4.93	10.02							
	W	CR2O3	0.99	1.91							
	W	RUO2	0.20	0.33							
	W	P2O5	0.25	0.45	30.72						
	W	S03	14.79	15.07							
	W	SiO2	0.99	0.75							
	W	F	0.49	0.12							
108					1050.	44.54			3.	2.56	1
	A	NA2O	14.53	10.13			NAOH	.26			
	A	CAO	15.65	9.87			CA(OH)2	.14			
	A	AL2O3	4.47	5.13			AL(NO3)3-9H2O	.08			
	A	P2O5	19.01	30.34			H3PO3	.34			
	W	NA2O	16.77	11.69	21.82						
	W	NI0	1.12	0.94							
	W	AL2O3	2.79	3.20	8.33						
	W	FE2O3	5.59	10.04							
	W	CR2O3	1.12	1.91							
	W	RUO2	0.22	0.33							
	W	P2O5	0.28	0.45	30.78						
	W	S03	16.77	15.10							
	W	SiO2	1.12	0.76							
	W	F	0.56	0.12							
109					1000.	44.42			5.	2.63	1
	A	NA2O	13.62	10.10			NAOH	.26			
	A	MGO	20.95	10.11			MGO	.20			
	A	AL2O3	4.19	5.11			AL(NO3)3-9H2O	.08			
	A	P2O5	17.81	30.26			H3PO3	.34			
	W	NA2O	15.72	11.66	21.76						
	W	NI0	1.05	0.94							
	W	AL2O3	2.62	3.20	8.31						
	W	FE2O3	5.24	10.01							
	W	CR2O3	1.05	1.91							
	W	RUO2	0.21	0.33							
	W	P2O5	0.26	0.44	30.70						
	W	S03	15.72	15.06							
	W	SiO2	1.05	0.75							
	W	F	0.52	0.12							
110					925.	37.48			4.	2.38	3
	A	NA2O	18.75	14.21			NAOH	1.1			
	A	MGO	16.85	8.31			MGO	.80			
	A	B2O3	14.32	12.20			NA2B4O7-10H2O	.34			
	A	P2O5	16.01	27.80			H3PO3	1.5			
	W	NA2O	6.32	4.79	19.00						
	W	NI0	0.21	0.19							
	W	AL2O3	1.05	1.31							
	W	FE2O3	5.27	10.29							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	S03	21.07	20.63							
111					1000.	46.31			1.	2.50	3
	A	NA2O	12.65	9.08			NAOH	.92			
	A	MGO	22.00	10.27			MGO	.80			
	A	P2O5	20.90	34.35			H3PO3	1.5			
	W	NA2O	8.25	5.92	15.00						
	W	NI0	0.27	0.24							
	W	AL2O3	1.37	1.62							
	W	FE2O3	6.87	12.71							
	W	CR2O3	0.14	0.24							
	W	RUO2	0.05	0.08							
	W	S03	27.50	25.49							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
112					-0.	47.57			6.	2.57	3
	A	MGO	35.35	17.14			MGO	1.3			
	A	P2O5	20.67	35.28			H3PO3	1.5			
	W	NA2O	8.16	6.08							
	W	NI0	0.27	0.24							
	W	AL2O3	1.36	1.67							
	W	FE2O3	6.80	13.06							
	W	CR2O3	0.14	0.25							
	W	RUO2	0.05	0.09							
	W	SO3	27.20	26.19							
113					-0.	45.15			6.	2.52	3
	A	NA2O	11.99	8.85			NAOH	.92			
	A	MGO	26.06	12.52			MGO	1.0			
	A	P2O5	19.81	33.49			H3PO3	1.5			
	W	NA2O	7.82	5.77	14.62						
	W	NI0	0.26	0.23							
	W	AL2O3	1.30	1.58							
	W	FE2O3	6.52	12.39							
	W	CR2O3	0.13	0.24							
	W	RUO2	0.05	0.08							
	W	SO3	26.06	24.85							
114					1000.	44.63			3.	2.62	3
	A	MGO	43.39	22.27			MGO	1.8			
	A	P2O5	18.19	33.10			H3PO3	1.5			
	W	NA2O	7.18	5.71							
	W	NI0	0.24	0.23							
	W	AL2O3	1.20	1.56							
	W	FE2O3	5.99	12.25							
	W	CR2O3	0.12	0.23							
	W	RUO2	0.05	0.08							
	W	SO3	23.94	24.57							
115					950.	35.18			5.	2.37	3
	A	NA2O	25.21	19.48			NAOH	2.0			
	A	MGO	15.51	7.80			MGO	.80			
	A	B2O3	13.19	11.45			NA2B4O7-10H2O	.34			
	A	P2O5	14.74	26.09			H3PO3	1.5			
	W	NA2O	5.82	4.50	23.98						
	W	NI0	0.19	0.18							
	W	AL2O3	0.97	1.23							
	W	FE2O3	4.85	9.65							
	W	CR2O3	0.10	0.18							
	W	RUO2	0.04	0.06							
	W	SO3	19.39	19.36							
116					-0.	46.35			6.	2.59	3
	A	MGO	38.69	19.27			MGO	1.5			
	A	P2O5	19.60	34.38			H3PO3	1.5			
	W	NA2O	7.74	5.93							
	W	NI0	0.26	0.24							
	W	AL2O3	1.29	1.62							
	W	FE2O3	6.45	12.72							
	W	CR2O3	0.13	0.24							
	W	RUO2	0.05	0.08							
	W	SO3	25.79	25.51							
117					925.	44.55			5.	2.49	3
	A	NA2O	17.20	12.53			NAOH	1.3			
	A	MGO	20.85	9.88			MGO	.80			
	A	P2O5	19.81	33.04			H3PO3	1.5			
	W	NA2O	7.82	5.69	18.22						
	W	NI0	0.26	0.23							
	W	AL2O3	1.30	1.56							
	W	FE2O3	6.52	12.23							
	W	CR2O3	0.13	0.23							
	W	RUO2	0.05	0.08							
	W	SO3	26.06	24.52							
118					950.	38.58			4.	2.40	3
	A	NA2O	20.06	15.12			NAOH	1.3			
	A	MGO	17.22	8.45			MGO	.79			
	A	B2O3	10.90	9.24			NA2B4O7-10H2O	.25			
	A	P2O5	16.57	28.61			H3PO3	1.5			
	W	NA2O	6.54	4.93	20.06						
	W	NI0	0.22	0.20							
	W	AL2O3	1.09	1.35							
	W	FE2O3	5.45	10.59							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	SO3	21.80	21.24							
119					900.	35.08			5.	2.35	3
	A	NA2O	21.37	16.44			NAOH	1.3			
	A	MGO	15.35	7.68			MGO	.79			
	A	B2O3	17.10	14.78			NA2B4O7-10H2O	.44			
	A	P2O5	14.77	26.02			H3PO3	1.5			
	W	NA2O	5.83	4.48	20.93						
	W	NI0	0.19	0.18							
	W	AL2O3	0.97	1.23							
	W	FE2O3	4.86	9.63							
	W	CR2O3	0.10	0.18							
	W	RUO2	0.04	0.06							
	W	SO3	19.43	19.31							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W ₀	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
120					900.	35.74			5.	2.40	3
	A	NA20	19.39	15.23			NAOH	1.3			
	A	MGO	21.53	10.90			MGO	1.1			
	A	B203	13.19	11.63			NA2B4O7-10H2O	.34			
	A	P205	14.74	26.50			H3PO3	1.5			
	W	NA20	5.82	4.57	19.80						
	W	NIO	0.19	0.18							
	W	AL2O3	0.97	1.25							
	W	FE2O3	4.85	9.81							
	W	CR2O3	0.10	0.19							
	W	RUO2	0.04	0.07							
	W	SO3	19.39	19.67							
121					925.	39.73			1.	2.42	3
	A	NA20	7.56	5.76			NA2B4O7-10H2O	.34			
	A	MGO	24.46	12.11			MGO	1.1			
	A	B203	15.12	12.93			H3PO3	1.5			
	A	P205	16.90	29.47							
	W	NA20	6.67	5.08	10.83						
	W	NIO	0.22	0.20							
	W	AL2O3	1.11	1.39							
	W	FE2O3	5.56	10.90							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.04	0.07							
	W	SO3	22.24	21.87							
122					975.	31.50			5.	2.37	3
	A	NA20	23.65	17.45			NAOH	2.0			
	A	MGO	14.55	6.98			MGO	.80			
	A	B203	12.37	10.25			NA2B4O7-10H2O	.34			
	A	P205	20.01	33.81			H3PO3	2.1			
	W	NA20	5.46	4.03	21.47						
	W	NIO	0.18	0.16							
	W	AL2O3	0.91	1.10							
	W	FE2O3	4.55	8.65							
	W	CR2O3	0.09	0.16							
	W	RUO2	0.04	0.06							
	W	SO3	18.19	17.34							
123					1000.	38.60			5.	2.48	3
	A	NA20	16.13	11.18			NA4P2O7-10H2O	.34			
	A	MGO	19.45	8.77			MGO	.82			
	A	P205	26.08	41.44			H3PO3	1.5			
	W	NA20	7.11	4.93	16.12						
	W	NIO	0.24	0.20							
	W	AL2O3	1.19	1.35							
	W	FE2O3	5.93	10.60							
	W	CR2O3	0.12	0.20							
	W	RUO2	0.05	0.07							
	W	SO3	23.71	21.25							
124					1025.	42.98			5.	2.51	3
	A	NA20	8.77	6.23			NA4P2O7-10H2O	.17			
	A	MGO	25.54	11.79			MGO	.99			
	A	P205	23.99	39.00			H3PO3	1.5			
	W	NA20	7.74	5.49	11.72						
	W	NIO	0.26	0.22							
	W	AL2O3	1.29	1.51							
	W	FE2O3	6.45	11.80							
	W	CR2O3	0.13	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	25.79	23.66							
125					950.	35.98			3.	2.46	3
	A	NA20	20.37	14.10			NA4P2O7-10H2O	.46			
	A	MGO	17.27	7.78			MGO	.78			
	A	P205	26.57	42.14			H3PO3	1.5			
	W	NA20	6.64	4.60	18.70						
	W	NIO	0.22	0.18							
	W	AL2O3	1.11	1.26							
	W	FE2O3	5.53	9.88							
	W	CR2O3	0.11	0.19							
	W	RUO2	0.04	0.07							
	W	SO3	22.14	19.81							
126					1010.	32.36			5.	2.49	3
	A	NA20	13.78	9.51			NAH2PO4-H2O	1.4			
	A	MGO	23.97	10.76			MGO	1.2			
	A	P205	29.96	47.37			H3PO3	1.5			
	W	NA20	5.99	4.14	13.65						
	W	NIO	0.20	0.17							
	W	AL2O3	1.00	1.13							
	W	FE2O3	4.99	8.88							
	W	CR2O3	0.10	0.17							
	W	RUO2	0.04	0.06							
	W	SO3	19.97	17.81							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
127					1000.	39.20			5.	2.52	3
	A	NA2O	7.99	5.68			NAH2PO4-H2O	.68			
	A	MGO	28.19	13.04			MGO	1.2			
	A	P2O5	25.84	42.08			H3PO3	1.5			
	W	NA2O	7.05	5.01	10.69						
	W	NiO	0.23	0.20							
	W	AL2O3	1.17	1.37							
	W	FE2O3	5.87	10.76							
	W	CR2O3	0.12	0.20							
	W	RUO2	0.05	0.07							
	W	SO3	23.49	21.58							
128					950.	41.54			4.	2.45	3
	A	NA2O	20.01	14.87			NAOH	1.5			
	A	MGO	19.06	9.21			MGO	.80			
	A	B2O3	4.29	3.58			NA2B4O7-10H2O	.09			
	A	P2O5	18.11	30.81			H3PO3	1.5			
	W	NA2O	7.15	5.31	20.18						
	W	NiO	0.24	0.21							
	W	AL2O3	1.19	1.46							
	W	FE2O3	5.96	11.40							
	W	CR2O3	0.12	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	23.83	22.86							
129					925.	39.18			4.	2.42	3
	A	NA2O	22.14	16.69			NAOH	1.7			
	A	MGO	17.71	8.69			MGO	.80			
	A	B2O3	7.53	6.38			NA2B4O7-10H2O	.17			
	A	P2O5	16.83	29.06			H3PO3	1.5			
	W	NA2O	6.64	5.01	21.70						
	W	NiO	0.22	0.20							
	W	AL2O3	1.11	1.37							
	W	FE2O3	5.53	10.75							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	SO3	22.14	21.57							
130					925.	35.18			3.	2.37	3
	A	NA2O	25.21	19.48			NAOH	2.0			
	A	MGO	15.51	7.80			MGO	.80			
	A	B2O3	13.19	11.45			NA2B4O7-10H2O	.34			
	A	P2O5	14.74	26.09			H3PO3	1.5			
	W	NA2O	5.82	4.50	23.98						
	W	NiO	0.19	0.18							
	W	AL2O3	0.97	1.23							
	W	FE2O3	4.85	9.65							
	W	CR2O3	0.10	0.18							
	W	RUO2	0.04	0.06							
	W	SO3	19.39	19.36							
131					950.	31.58			5.	2.33	3
	A	NA2O	28.93	22.88			NAOH	2.4			
	A	MGO	13.61	7.00			MGO	.80			
	A	B2O3	17.02	15.12			NA2B4O7-10H2O	.52			
	A	P2O5	12.93	23.42			H3PO3	1.5			
	W	NA2O	5.10	4.04	26.91						
	W	NiO	0.17	0.16							
	W	AL2O3	0.85	1.11							
	W	FE2O3	4.25	8.67							
	W	CR2O3	0.09	0.17							
	W	RUO2	0.03	0.06							
	W	SO3	17.02	17.38							
132					-0.	34.58			6.	2.66	3
	A	NA2O	2.75	2.51			NA2B4O7-10H2O	.17			
	A	MGO	53.34	31.63			MGO	3.3			
	A	B2O3	5.50	5.63			H3PO3	1.5			
	A	P2O5	12.28	25.65							
	W	NA2O	4.85	4.42	6.93						
	W	NiO	0.16	0.18							
	W	AL2O3	0.81	1.21							
	W	FE2O3	4.04	9.49							
	W	CR2O3	0.08	0.18							
	W	RUO2	0.03	0.06							
	W	SO3	16.16	19.04							
133					950.	40.05			3.	2.47	3
	A	NA2O	13.47	10.41			NAOH	.87			
	A	MGO	26.51	13.32			MGO	1.2			
	A	B2O3	7.51	6.52			NA2B4O7-10H2O	.17			
	A	P2O5	16.79	29.70			H3PO3	1.5			
	W	NA2O	6.63	5.12	15.53						
	W	NiO	0.22	0.21							
	W	AL2O3	1.10	1.40							
	W	FE2O3	5.52	10.99							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.04	0.07							
	W	SO3	22.09	22.04							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PURE FREE D.	WASTE TYPE
134					925.	38.73			5.	2.40	3
	A	NA2O	26.57	19.80			NAOH	2.1			
	A	MGO	13.28	6.44			MGO	.60			
	A	B2O3	7.53	6.30			NA2B4O7-10H2O	.17			
	A	P2O5	16.83	28.72			H3PO3	1.5			
	W	NA2O	6.64	4.95	24.75						
	W	NIO	3.22	0.20							
	W	AL2O3	1.11	1.36							
	W	FE2O3	5.53	10.63							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	S03	22.14	21.32							
135					925.	37.86			5.	2.36	3
	A	NA2O	35.42	25.81			NAOH	2.9			
	A	MGO	4.43	2.10			MGO	.20			
	A	B2O3	7.53	6.16			NA2B4O7-10H2O	.17			
	A	P2O5	16.83	28.08			H3PO3	1.5			
	W	NA2O	6.64	4.84	30.65						
	W	NIO	0.22	0.19							
	W	AL2O3	1.11	1.33							
	W	FE2O3	5.53	10.39							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	S03	22.14	20.84							
136					925.	40.33			4.	2.38	3
	A	NA2O	33.68	24.06			NAOH	2.7			
	A	MGO	4.81	2.24			MGO	.20			
	A	B2O3	4.33	3.48			NA2B4O7-10H2O	.09			
	A	P2O5	18.28	29.91			H3PO3	1.5			
	W	NA2O	7.22	5.15	29.21						
	W	NIO	0.24	0.21							
	W	AL2O3	1.20	1.41							
	W	FE2O3	6.01	11.07							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	24.06	22.20							
137					950.	36.72			1.	2.39	3
	A	NA2O	24.50	18.77			NAOH	1.8			
	A	MGO	16.34	8.14			MGO	.80			
	A	B2O3	10.62	9.14			NA2B4O7-10H2O	.26			
	A	P2O5	15.52	27.23			H3PO3	1.5			
	W	NA2O	6.13	4.69	23.47						
	W	NIO	0.20	0.19							
	W	AL2O3	1.02	1.29							
	W	FE2O3	5.11	10.08							
	W	CR2O3	0.10	0.19							
	W	RUO2	0.04	0.07							
	W	S03	20.42	20.21							
138					950.	40.32			1.	2.44	3
	A	NA2O	21.12	15.81			NAOH	1.6			
	A	MGO	18.36	8.94			MGO	.80			
	A	B2O3	5.97	5.02			NA2B4O7-10H2O	.13			
	A	P2O5	17.44	29.91			H3PO3	1.5			
	W	NA2O	6.89	5.15	20.96						
	W	NIO	0.23	0.21							
	W	AL2O3	1.15	1.41							
	W	FE2O3	5.74	11.07							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.05	0.07							
	W	S03	22.95	22.20							
139					-0.	69.18			6.	2.57	3
	A	NA2O	3.34	2.65			NAOH	.18			
	A	MGO	29.66	15.34			MGO	.80			
	A	P2O5	7.04	12.83			H3PO3	.38			
	W	NA2O	11.12	8.84	11.50						
	W	NIO	0.37	0.36							
	W	AL2O3	1.85	2.42							
	W	FE2O3	9.27	18.99							
	W	CR2O3	0.19	0.36							
	W	RUO2	0.07	0.13							
	W	S03	37.08	38.08							
140					-0.	58.42			6.	2.53	3
	A	NA2O	9.10	6.97			NAOH	.56			
	A	MGO	26.00	12.95			MGO	.80			
	A	P2O5	12.35	21.66			H3PO3	.76			
	W	NA2O	9.75	7.47	14.44						
	W	NIO	0.32	0.30							
	W	AL2O3	1.62	2.05							
	W	FE2O3	8.12	16.03							
	W	CR2O3	0.16	0.31							
	W	RUO2	0.06	0.11							
	W	S03	32.50	32.16							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
141					1050.	52.71			4.	2.52	3
	A	NA2O	8.57	6.29			NAOH	.56			
	A	MGO	24.49	11.69			MGO	.80			
	A	P2O5	17.45	29.32			H3PO3	1.1			
	W	NA2O	9.18	6.74	13.03						
	W	NI0	0.31	0.27							
	W	AL2O3	1.53	1.85							
	W	FE2O3	7.65	14.47							
	W	CR2O3	0.15	0.28							
	W	RUO2	0.06	0.10							
	W	SO3	30.61	29.01							
142					1000.	44.55			1.	2.49	3
	A	NA2O	17.27	12.53			NAOH	1.3			
	A	MGO	20.85	9.88			MGO	.80			
	A	P2O5	19.81	33.04			H3PO3	1.5			
	W	NA2O	7.82	5.69	18.22						
	W	NI0	0.26	0.23							
	W	AL2O3	1.30	1.56							
	W	FE2O3	6.52	12.23							
	W	CR2O3	0.13	0.23							
	W	RUO2	0.05	0.08							
	W	SO3	26.06	24.52							
143					1000.	39.82			3.	2.47	3
	A	NA2O	20.16	14.42			NAOH	1.7			
	A	MGO	18.97	8.83			MGO	.80			
	A	P2O5	22.53	36.92			H3PO3	1.9			
	W	NA2O	7.11	5.09	19.51						
	W	NI0	0.24	0.20							
	W	AL2O3	1.19	1.40							
	W	FE2O3	5.93	10.93							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	23.71	21.92							
144					950.	36.75			5.	2.46	3
	A	NA2O	22.14	15.66			NAOH	2.0			
	A	MGO	17.71	8.15			MGO	.80			
	A	P2O5	24.35	39.45			H3PO3	2.2			
	W	NA2O	6.64	4.70	20.36						
	W	NI0	0.22	0.19							
	W	AL2O3	1.11	1.29							
	W	FE2O3	5.53	10.09							
	W	CR2O3	0.11	0.19							
	W	RUO2	0.04	0.07							
	W	SO3	22.14	20.23							
145					900.	30.47			3.	2.44	3
	A	NA2O	26.33	18.18			NAOH	2.8			
	A	MGO	15.05	6.76			MGO	.80			
	A	P2O5	28.21	44.60			H3PO3	3.0			
	W	NA2O	5.64	3.89	22.07						
	W	NI0	0.19	0.16							
	W	AL2O3	0.94	1.07							
	W	FE2O3	4.70	8.36							
	W	CR2O3	0.09	0.16							
	W	RUO2	0.04	0.06							
	W	SO3	18.81	16.77							
146					950.	41.85			1.	2.47	3
	A	NA2O	23.94	17.83			NAOH	2.0			
	A	MGO	19.15	9.28			MGO	.80			
	A	P2O5	18.19	31.04			H3PO3	1.5			
	W	NA2O	7.18	5.35	23.18						
	W	NI0	0.24	0.21							
	W	AL2O3	1.20	1.47							
	W	FE2O3	5.99	11.49							
	W	CR2O3	0.12	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	23.94	23.04							
147					925.	39.06			5.	2.46	3
	A	NA2O	30.59	23.30			NAOH	2.8			
	A	MGO	17.48	8.66			MGO	.80			
	A	P2O5	16.60	28.97			H3PO3	1.5			
	W	NA2O	6.55	4.99	28.30						
	W	NI0	0.22	0.20							
	W	AL2O3	1.09	1.37							
	W	FE2O3	5.46	10.72							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	SO3	21.85	21.50							
148					-0.	36.62			6.	2.45	3
	A	NA2O	36.17	28.09			NAOH	3.6			
	A	MGO	16.07	8.12			MGO	.80			
	A	P2O5	15.27	27.16			H3PO3	1.5			
	W	NA2O	6.03	4.68	32.77						
	W	NI0	0.20	0.19							
	W	AL2O3	1.30	1.28							
	W	FE2O3	5.32	10.05							
	W	CR2O3	0.10	0.19							
	W	RUO2	0.04	0.07							
	W	SO3	20.09	20.16							

WASTE STUDIES---CRNL

NCTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
149					-0.	34.47			6.	2.43	3
	A	NA2O	40.92	32.32			NAOH	4.4			
	A	MGO	14.88	7.64			MGO	.80			
	A	P2O5	14.13	25.57			H3PO3	1.5			
	W	NA2O	5.58	4.41	36.72						
	W	NiO	7.19	0.18							
	W	AL2O3	0.93	1.21							
	W	FE2O3	4.65	9.46							
	W	CR2O3	0.79	0.18							
	W	RUO2	0.04	0.06							
	W	SO3	18.60	18.98							
150					925.	40.83			5.	2.42	3
	A	NA2O	33.52	24.36			NAOH	2.9			
	A	MGO	9.58	4.53			MGO	.40			
	A	P2O5	18.19	30.28			H3PO3	1.5			
	W	NA2O	7.18	5.22	29.58						
	W	NiO	0.24	0.21							
	W	AL2O3	1.20	1.43							
	W	FE2O3	5.99	11.21							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	23.94	22.48							
151					950.	38.18			3.	2.41	3
	A	NA2O	39.33	29.28			NAOH	3.6			
	A	MGO	8.74	4.23			MGO	.40			
	A	P2O5	16.60	28.31			H3PO3	1.5			
	W	NA2O	6.55	4.88	34.16						
	W	NiO	0.22	0.20							
	W	AL2O3	1.09	1.34							
	W	FE2O3	5.46	10.48							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.04	0.07							
	W	SO3	21.85	21.01							
152					1025.	42.61			5.	2.53	3
	A	NA2O	15.18	11.62			NAOH	1.3			
	A	MGO	28.46	14.17			MGO	1.2			
	A	P2O5	18.02	31.60			H3PO3	1.5			
	W	NA2O	7.11	5.45	17.07						
	W	NiO	0.24	0.22							
	W	AL2O3	1.19	1.49							
	W	FE2O3	5.93	11.69							
	W	CR2O3	0.12	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	23.71	23.45							
153					1050.	39.99			3.	2.51	3
	A	NA2O	21.85	17.04			NAOH	2.0			
	A	MGO	26.22	13.30			MGO	1.2			
	A	P2O5	16.60	29.66			H3PO3	1.5			
	W	NA2O	6.55	5.11	22.15						
	W	NiO	0.22	0.21							
	W	AL2O3	1.09	1.40							
	W	FE2O3	5.46	10.98							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.04	0.07							
	W	SO3	21.85	22.02							
154					910.	43.08			1.	2.43	3
	A	NA2O	28.37	20.19			NAOH	2.1			
	A	MGO	10.32	4.78			MGO	.40			
	A	P2O5	19.60	31.95			H3PO3	1.5			
	W	NA2O	7.74	5.51	25.70						
	W	NiO	0.26	0.22							
	W	AL2O3	1.29	1.51							
	W	FE2O3	6.45	11.82							
	W	CR2O3	0.13	0.23							
	W	RUO2	0.05	0.08							
	W	SO3	25.79	23.71							
155					925.	43.00			1.	2.48	3
	A	NA2O	21.11	15.57			NAOH	1.7			
	A	MGO	19.87	9.54			MGO	.80			
	A	P2O5	18.87	31.89			H3PO3	1.5			
	W	NA2O	7.45	5.50	21.07						
	W	NiO	0.25	0.22							
	W	AL2O3	1.24	1.51							
	W	FE2O3	6.21	11.80							
	W	CR2O3	0.12	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	24.83	23.67							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
156					1000.	39.72			5.	2.46	3
	A	NA2O	29.34	22.00			NAOH	2.5			
	A	MGO	17.87	8.81			MGO	.80			
	A	P2O5	16.98	29.46			H3PO3	1.5			
	W	NA2O	6.70	5.08	27.08						
	W	NIO	0.22	0.20							
	W	AL2O3	1.12	1.39							
	W	FE2O3	5.58	10.90							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.04	0.07							
	W	SO3	22.34	21.87							
157					950.	41.55			5.	2.43	3
	A	NA2O	31.89	23.02			NAOH	2.5			
	A	MGO	9.81	4.61			MGO	.40			
	A	P2O5	18.64	30.82			H3PO3	1.5			
	W	NA2O	7.36	5.31	28.33						
	W	NIO	0.25	0.21							
	W	AL2O3	1.23	1.46							
	W	FE2O3	6.13	11.41							
	W	CR2O3	0.12	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	24.53	22.87							
158					1025.	39.46			3.	2.42	3
	A	NA2O	36.55	26.90			NAOH	3.3			
	A	MGO	9.14	4.38			MGO	.40			
	A	P2O5	17.36	29.26			H3PO3	1.5			
	W	NA2O	6.85	5.04	31.95						
	W	NIO	0.23	0.20							
	W	AL2O3	1.14	1.38							
	W	FE2O3	5.71	10.83							
	W	CR2O3	0.11	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	22.85	21.72							
159					1050.	38.96			5.	2.39	3
	A	NA2O	21.12	15.27			NAOH	1.6			
	A	CAO	18.36	12.02			CA(OH)2	.80			
	A	B2O3	5.97	4.85			NA2B4O7-H2O	.13			
	A	P2O5	17.44	28.90			H3PO3	1.5			
	W	NA2O	6.89	4.98	20.25						
	W	NIO	0.23	0.20							
	W	AL2O3	1.15	1.37							
	W	FE2O3	5.74	10.69							
	W	CR2O3	0.11	0.20							
	W	RUO2	0.05	0.07							
	W	SO3	22.95	21.45							
160					1000.	42.29			1.	2.41	3
	A	NA2O	28.37	19.82			NAOH	2.1			
	A	CAO	10.32	6.52			CA(OH)2	.40			
	A	P2O5	19.60	31.37			H3PO3	1.5			
	W	NA2O	7.74	5.41	25.23						
	W	NIO	0.26	0.22							
	W	AL2O3	1.29	1.48							
	W	FE2O3	6.45	11.61							
	W	CR2O3	0.13	0.22							
	W	RUO2	0.05	0.08							
	W	SO3	25.79	23.28							
161					925.	40.34			5.	2.42	3
	A	NA2O	23.36	16.33			NAOH	.22			
	A	CAO	16.23	10.26			CA(OH)2	.66			
	A	P2O5	20.65	33.07			NAH2PO2-H2O	1.7			
	W	NA2O	7.38	5.16	21.49						
	W	NIO	0.25	0.21							
	W	AL2O3	1.23	1.41							
	W	FE2O3	6.15	11.07							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	24.59	22.21							
162					950.	40.48			5.	2.42	3
	A	NA2O	22.96	16.38			NAOH	.33			
	A	CAO	19.10	12.35			CA(OH)2	.79			
	A	P2O5	18.85	30.81			NAH2PO2-H2O	1.6			
	W	NA2O	7.25	5.17	21.56						
	W	NIO	0.24	0.21							
	W	AL2O3	1.21	1.42							
	W	FE2O3	6.04	11.11							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	24.17	22.28							
163					975.	40.39			5.	2.43	3
	A	NA2O	22.47	16.35			NAOH	.42			
	A	CAO	22.00	14.48			CA(OH)2	.93			
	A	P2O5	17.27	28.77			NAH2PO2-H2O	1.5			
	W	NA2O	7.10	5.16	21.51						
	W	NIO	0.24	0.21							
	W	AL2O3	1.18	1.42							
	W	FE2O3	5.91	11.09							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	SO3	23.66	22.23							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
164					900.	40.61			3.	2.39	3
	A	NA2O	32.61	22.50			NAOH	.88			
	A	CAO	5.77	3.60			CA(OH)2	.23			
	A	P2O5	21.07	33.29			NAH2PO2-H2O	1.7			
	W	NA2O	7.52	5.19	27.69						
	W	NIO	0.25	0.21							
	W	AL2O3	1.25	1.42							
	W	FE2O3	6.27	11.15							
	W	CR2O3	0.13	0.21							
	W	RUO2	0.05	0.07							
	W	S03	25.08	22.36							
165					900.	40.50			3.	2.40	3
	A	NA2O	31.73	22.43			NAOH	.98			
	A	CAO	9.76	6.25			CA(OH)2	.40			
	A	P2O5	19.04	33.83			NAH2PO2-H2O	1.6			
	W	NA2O	7.32	5.18	27.61						
	W	NIO	0.24	0.21							
	W	AL2O3	1.22	1.42							
	W	FE2O3	6.10	11.12							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	24.41	22.29							
166					950.	40.48			3.	2.40	3
	A	NA2O	31.12	22.42			NAOH	1.1			
	A	CAO	12.69	8.27			CAO	.53			
	A	P2O5	17.48	28.83			NAH2PO2-H2O	1.5			
	W	NA2O	7.18	5.17	27.59						
	W	NIO	0.24	0.21							
	W	AL2O3	1.20	1.42							
	W	FE2O3	5.99	11.11							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	23.94	22.28							
167					-0.	39.80			6.	2.44	3
	A	NA2O	15.05	10.69			NAH2PO2-H2O	1.3			
	A	CAO	26.27	16.88			CAO	1.1			
	A	P2O5	20.06	32.63			H3PO3	.41			
	W	NA2O	7.17	5.09	15.77						
	W	NIO	0.24	0.20							
	W	AL2O3	1.19	1.40							
	W	FE2O3	5.97	10.93							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	23.88	21.91							
168					1075.	40.07			3.	2.43	3
	A	NA2O	15.49	10.76			NAH2PO2-H2O	1.3			
	A	CAO	22.87	14.37			CAO	.93			
	A	P2O5	21.88	34.80			H3PO3	.51			
	W	NA2O	7.38	5.12	15.88						
	W	NIO	0.25	0.21							
	W	AL2O3	1.23	1.40							
	W	FE2O3	6.15	11.00							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	24.59	22.06							
169					950.	41.02			5.	2.43	3
	A	NA2O	16.08	11.01			NAH2PO2-H2O	1.3			
	A	CAO	19.91	12.34			CAO	.78			
	A	P2O5	22.72	35.63			H3PO3	.61			
	W	NA2O	7.66	5.24	16.26						
	W	NIO	0.26	0.21							
	W	AL2O3	1.28	1.44							
	W	FE2O3	6.38	11.26							
	W	CR2O3	0.13	0.21							
	W	RUO2	0.05	0.08							
	W	S03	25.53	22.58							
170					-0.	40.10			6.	2.50	3
	A	NA2O	15.27	10.77			NAH2PO2-H2O	1.3			
	A	CAO	22.53	14.38			CAO	.93			
	A	AL2O3	5.33	6.18			AL(NO3)3-9H2O	.43			
	A	P2O5	17.69	28.57			H3PO3	.20			
	W	NA2O	7.27	5.13	15.89						
	W	NIO	0.24	0.21							
	W	AL2O3	1.21	1.41	7.59						
	W	FE2O3	6.06	11.01							
	W	CR2O3	0.12	0.21							
	W	RUO2	0.05	0.07							
	W	S03	24.23	22.08							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
171					1000.	19.77			4.	2.59	3
	A	NA20	25.59	16.85			NAH2P02-H20	3.0			
	A	BA0	2.56	4.17			BA (N03)2	.20			
	A	B203	12.79	9.47			NA2B407-10H20	.50			
	A	AL203	19.19	20.79			AL (N03)3-9H20	3.0			
	A	P205	19.19	28.95							
	W	NA20	3.84	29.42	2.53	19.38					
	W	N10	0.13	0.10							
	W	AL203	0.64	19.83	0.69	21.48					
	W	FE203	3.20	5.43							
	W	CR203	0.06	0.10							
	W	RU02	0.03	0.04							
	W	S03	12.79	10.89							
172					1100.	20.67			5.	2.90	3
	A	NA20	21.00	12.33			NAH2P02-H20	2.8			
	A	BA0	15.00	21.79			BA (N03)2	1.0			
	A	B203	3.75	2.47			B203	.25			
	A	AL203	15.00	14.49			AL (N03)3-9H20	2.0			
	A	P205	21.00	28.24							
	W	NA20	4.50	25.50	2.64	14.97					
	W	N10	0.15	0.11							
	W	AL203	0.75	15.75	0.72	15.21					
	W	FE203	3.75	5.67							
	W	CR203	0.07	0.11							
	W	RU02	0.03	0.04							
	W	S03	15.00	11.38							
173					1100.	19.27			5.	2.96	3
	A	NA20	19.53	11.50			NAH2P02-H20	2.8			
	A	BA0	13.95	20.32			BA (N03)2	1.0			
	A	B203	3.49	2.31			B203	.25			
	A	AL203	20.93	20.27			AL (N03)3-9H20	3.0			
	A	P205	19.53	26.33							
	W	NA20	4.19	23.72	2.46	13.96					
	W	N10	0.14	0.10							
	W	AL203	0.70	21.63	0.68	20.94					
	W	FE203	3.49	5.29							
	W	CR203	0.07	0.10							
	W	RU02	0.03	0.04							
	W	S03	13.95	10.61							
174					1100.	22.50			4.	2.56	3
	A	NA20	21.38	14.38			NAH2P02-H20	3.0			
	A	CA0	11.40	6.94			CA (N03)2-4H20	.80			
	A	B203	5.70	4.31			H3B03	.80			
	A	AL203	17.10	18.93			AL (N03)3-9H20	2.4			
	A	P205	21.38	32.94							
	W	NA20	4.28	25.65	2.88	17.26					
	W	N10	0.14	0.12							
	W	AL203	0.71	17.81	0.79	19.72					
	W	FE203	3.56	6.18							
	W	CR203	0.07	0.12							
	W	RU02	0.03	0.04							
	W	S03	14.25	12.39							
175					1100.	19.18			4.	2.54	3
	A	NA20	24.64	16.34			NAH2P02-H20	4.0			
	A	CA0	9.86	5.91			CA (N03)2-4H20	.80			
	A	B203	4.93	3.67			H3B03	.80			
	A	AL203	16.02	17.47			AL (N03)3-9H20	2.5			
	A	P205	24.64	37.42							
	W	NA20	3.70	28.34	2.45	18.79					
	W	N10	0.12	0.10							
	W	AL203	0.62	16.63	0.67	18.15					
	W	FE203	3.08	5.26							
	W	CR203	0.06	0.10							
	W	RU02	0.02	0.04							
	W	S03	12.32	10.56							
176					-0.	21.49			6.	2.61	3
	A	NA20	20.50	13.73			NAH2P02-H20	3.0			
	A	CA0	10.93	6.63			CA (N03)2-4H20	.80			
	A	B203	5.47	4.11			H3B03	.80			
	A	AL203	20.50	22.59			AL (N03)3-9H20	3.0			
	A	P205	20.50	31.45							
	W	NA20	4.10	24.60	2.75	16.48					
	W	N10	0.14	0.11							
	W	AL203	0.68	21.18	0.75	23.34					
	W	FE203	3.42	5.90							
	W	CR203	0.07	0.11							
	W	RU02	0.03	0.04							
	W	S03	13.67	11.83							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
177					-0.	15.29			6.	3.17	3
	A	NA2O	17.01	9.77			NAH2PO2-H2O	3.0			
	A	CAO	9.37	4.72			CA(NO3)2-4H2O	.80			
	A	B2O3	4.54	2.93			H3BO3	.80			
	A	AL2O3	22.68	21.44			AL(NO3)3-9H2O	4.0			
	A	PB0	11.34	23.47							
	A	P2O5	17.71	22.38							
	W	NA2O	3.40	1.95	11.73						
	W	NIO	0.11	0.08							
	W	AL2O3	7.57	0.54	21.97						
	W	FE2O3	2.84	4.20							
	W	CR2O3	0.06	0.08							
	W	RUO2	7.02	0.03							
	W	S03	11.34	8.42							
178					90.	41.63			3.	2.39	3
	A	NA2O	27.65	17.74			NAH2PO2-H2O	2.0			
	A	P2O5	27.65	40.63			PB(NO3)2	1.0			
	W	NA2O	8.29	5.32	23.06						
	W	NIO	0.28	0.21							
	W	AL2O3	1.38	1.46							
	W	FE2O3	6.91	11.43							
	W	CR2O3	0.14	0.22							
	W	RUO2	7.06	0.08							
	W	S03	27.65	22.92							
179					850.	24.54			3.	3.22	3
	A	NA2O	22.37	11.50			NAH2PO2-H2O	2.0			
	A	B2O3	4.77	2.35			NA2B4O7-10H2O	.10			
	A	PB0	20.34	37.66			PB(NO3)2	1.0			
	A	P2O5	20.34	23.95							
	W	NA2O	6.10	3.14	14.64						
	W	NIO	0.20	0.13							
	W	AL2O3	1.02	0.86							
	W	FE2O3	5.08	6.74							
	W	CR2O3	7.10	0.13							
	W	RUO2	0.04	0.04							
	W	S03	20.34	13.51							
180					1050.	31.60			3.	3.06	3
	A	BAO	29.12	36.65			BA(NO3)2	1.1			
	A	B2O3	1.59	0.91			H3BO3	.12			
	A	P2O5	26.48	30.84			H3PO3	2.0			
	W	NA2O	7.94	4.04							
	W	NIO	0.26	0.16							
	W	AL2O3	1.32	1.11							
	W	FE2O3	6.62	8.67							
	W	CR2O3	0.13	0.17							
	W	RUO2	0.05	0.06							
	W	S03	26.48	17.40							
181					1050.	26.98			5.	2.82	3
	A	BAO	18.03	22.75			BA(NO3)2	.80			
	A	B2O3	2.03	1.16			H3BO3	.18			
	A	AL2O3	5.18	4.35			AL(NO3)3-9H2O	.46			
	A	P2O5	38.31	44.76			H3PO3	3.5			
	W	NA2O	6.76	3.45							
	W	NIO	0.23	0.14							
	W	AL2O3	1.13	0.95	5.29						
	W	FE2O3	5.63	7.40							
	W	CR2O3	0.11	0.14							
	W	RUO2	0.05	0.05							
	W	S03	22.54	14.85							
182					-0.	32.63			6.	2.88	3
	A	BAO	21.58	27.53			BA(NO3)2	.80			
	A	B2O3	1.62	0.94			H3BO3	.12			
	A	AL2O3	0.81	0.69			AL(NO3)3-9H2O	.06			
	A	P2O5	32.37	38.22			H3PO3	2.4			
	W	NA2O	8.09	4.17							
	W	NIO	0.27	0.17							
	W	AL2O3	1.35	1.14	1.83						
	W	FE2O3	6.74	8.96							
	W	CR2O3	0.13	0.17							
	W	RUO2	0.05	0.06							
	W	S03	26.98	17.96							
183					-0.	33.71			6.	2.89	3
	A	BAO	22.18	28.43			BA(NO3)2	.80			
	A	B2O3	1.66	0.97			H3BO3	.12			
	A	AL2O3	0.83	0.71			AL(NO3)3-9H2O	.06			
	A	P2O5	30.50	36.18			H3PO3	2.2			
	W	NA2O	8.32	4.31							
	W	NIO	0.28	0.17							
	W	AL2O3	1.39	1.18	1.89						
	W	FE2O3	6.93	9.25							
	W	CR2O3	0.14	0.18							
	W	RUO2	0.06	0.06							
	W	S03	27.72	18.55							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
184					1100.	28.32			5.	2.55	3
	A	NA2O	22.46	15.69			NAOH	.26			
	A	CAO	13.82	8.74			CA (NO3)2-4H2O	.80			
	A	B2O3	4.49	3.53			NA2B4O7-10H2O	.13			
	A	AL2O3	14.00	16.08			AL (NO3)3-9H2O	1.6			
	A	P2O5	17.28	27.64			NAH2PO4-H2O	2.0			
	W	NA2O	5.18	27.65	19.31						
	W	NI0	0.17	0.15							
	W	AL2O3	0.86	14.86	17.07						
	W	FE2O3	4.32	7.77							
	W	CR2O3	0.09	0.15							
	W	RUO2	0.03	0.05							
	W	S03	17.28	15.59							
185					-0.	14.65			5.	2.56	3
	A	NA2O	29.72	19.98			NAOH	.65			
	A	CAO	7.45	4.52			CA (NO3)2-4H2O	.80			
	A	B2O3	6.04	4.56			NA2B4O7-10H2O	.33			
	A	AL2O3	18.58	20.54			AL (NO3)3-9H2O	4.1			
	A	P2O5	23.22	35.75			NAH2PO4-H2O	5.0			
	W	NA2O	2.79	32.51	21.85						
	W	NI0	0.09	0.08							
	W	AL2O3	0.46	19.04	21.06						
	W	FE2O3	2.32	4.02							
	W	CR2O3	0.05	0.08							
	W	RUO2	0.02	0.03							
	W	S03	9.29	8.07							
186					975.	34.16			5.	2.42	3
	A	NA2O	22.84	16.01			NAH2PO4-H2O	2.1			
	A	CAO	20.76	13.17			CA (NO3)2-4H2O	1.0			
	A	P2O5	22.84	36.67							
	W	NA2O	6.23	29.06	20.38						
	W	NI0	0.21	0.18							
	W	AL2O3	1.04	1.20							
	W	FE2O3	5.19	9.38							
	W	CR2O3	0.10	0.18							
	W	RUO2	0.04	0.06							
	W	S03	20.76	18.80							
187					950.	35.08			3.	2.41	3
	A	NA2O	23.82	16.44			NAH2PO4-H2O	2.2			
	A	CAO	17.33	10.82			CA (NO3)2-4H2O	.80			
	A	P2O5	23.82	37.66			NAH2PO4-H2O	2.2			
	W	NA2O	6.50	30.32	20.93						
	W	NI0	0.22	0.18							
	W	AL2O3	1.08	1.23							
	W	FE2O3	5.41	9.63							
	W	CR2O3	0.11	0.18							
	W	RUO2	0.04	0.06							
	W	S03	21.66	19.31							
188					900.	34.98			3.	2.40	3
	A	NA2O	28.16	19.38			NAOH	.40			
	A	CAO	13.00	8.09			CA (NO3)2-4H2O	.60			
	A	P2O5	23.82	37.55			NAH2PO4-H2O	2.2			
	W	NA2O	6.50	34.65	23.85						
	W	NI0	0.22	0.18							
	W	AL2O3	1.08	1.23							
	W	FE2O3	5.41	9.60							
	W	CR2O3	0.11	0.18							
	W	RUO2	0.04	0.06							
	W	S03	21.66	19.26							
189					925.	34.88			3.	2.39	3
	A	NA2O	32.49	22.29			NAOH	.80			
	A	CAO	8.66	5.38			CA (NO3)2-4H2O	.40			
	A	P2O5	23.82	37.44			NAH2PO4-H2O	2.2			
	W	NA2O	6.50	38.99	26.75						
	W	NI0	0.22	0.18							
	W	AL2O3	1.08	1.22							
	W	FE2O3	5.41	9.57							
	W	CR2O3	0.11	0.18							
	W	RUO2	0.04	0.06							
	W	S03	21.66	19.20							
190					875.	29.71			3.	2.33	3
	A	NA2O	30.48	21.52			NAOH	1.5			
	A	CAO	7.17	4.58			CA (NO3)2-4H2O	.40			
	A	B2O3	11.83	9.39			NA2B4O7-10H2O	.33			
	A	P2O5	21.52	34.79			NAH2PO4-H2O	1.3			
	W	NA2O	5.38	35.86	25.32						
	W	NI0	0.18	0.15							
	W	AL2O3	0.90	1.04							
	W	FE2O3	4.48	8.16							
	W	CR2O3	0.09	0.16							
	W	RUO2	0.04	0.05							
	W	S03	17.93	16.36							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
191					925.	34.91			3.	2.33	3
	A	NA20	34.02	25.29			NAOH	1.3			
	A	CA0	8.00	5.38			CA (NO3)2-4H2O	.40			
	A	B203	10.61	8.86			NA2B4O7-10H2O	.27			
	A	P205	15.01	25.55			NAH2PO4-H2O	1.5			
	W	NA20	6.00	4.46	29.75						
	W	NI0	0.20	0.18							
	W	AL203	1.00	1.22							
	W	FE203	5.00	9.58							
	W	CR203	0.10	0.18							
	W	RU02	0.04	0.06							
	W	S03	20.01	19.22							
192					900.	35.00			3.	2.35	3
	A	NA20	33.08	23.86			NAOH	1.1			
	A	CA0	8.27	5.40			CA (NO3)2-4H2O	.40			
	A	B203	7.03	5.70			NA2B4O7-10H2O	.17			
	A	P205	18.19	30.05			NAH2PO4-H2O	1.8			
	W	NA20	6.20	4.47	28.33						
	W	NI0	0.21	0.18							
	W	AL203	1.03	1.23							
	W	FE203	5.17	9.61							
	W	CR203	0.10	0.18							
	W	RU02	0.04	0.06							
	W	S03	20.67	19.26							
193					875.	35.26			3.	2.38	3
	A	NA20	32.21	22.53			NAOH	.94			
	A	CA0	8.59	5.44			CA (NO3)2-4H2O	.40			
	A	B203	3.01	2.36			NA2B4O7-10H2O	.07			
	A	P205	21.47	34.41			NAH2PO4-H2O	2.0			
	W	NA20	6.44	4.51	27.04						
	W	NI0	0.21	0.18							
	W	AL203	1.07	1.24							
	W	FE203	5.37	9.68							
	W	CR203	0.11	0.18							
	W	RU02	0.04	0.06							
	W	S03	21.47	19.41							
194					1100.	39.28			3.	2.40	3
	A	NA20	14.30	8.87			NAOH	1.1			
	A	SI02	9.71	5.84			SI02	.36			
	A	P205	32.37	46.00			H3PO3	2.3			
	W	NA20	8.09	5.02	13.89						
	W	NI0	0.27	0.20							
	W	AL203	1.35	1.38							
	W	FE203	6.74	10.78							
	W	CR203	0.13	0.21							
	W	RU02	0.05	0.07							
	W	S03	26.98	21.62							
195					1050.	40.42			4.	2.39	3
	A	NA20	21.60	14.12			NAOH	1.7			
	A	SI02	9.48	6.01			SI02	.36			
	A	P205	26.34	39.45			H3PO3	2.1			
	W	NA20	7.90	5.17	19.29						
	W	NI0	0.26	0.21							
	W	AL203	1.32	1.42							
	W	FE203	6.58	11.09							
	W	CR203	0.13	0.21							
	W	RU02	0.05	0.07							
	W	S03	26.34	22.25							
196					950.	29.64			3.	2.39	3
	A	NA20	22.55	13.89			NAOH	2.2			
	A	SI02	7.38	4.41			SI02	.36			
	A	P205	36.91	52.06			H3PO3	1.8			
	W	NA20	6.15	3.79	17.68						
	W	NI0	0.21	0.15							
	W	AL203	1.03	1.04							
	W	FE203	5.13	8.13							
	W	CR203	0.10	0.15							
	W	RU02	0.04	0.05							
	W	S03	20.50	16.31							
197					950.	31.16			3.	2.38	3
	A	NA20	28.71	18.59			NAOH	2.8			
	A	SI02	7.38	4.63			SI02	.36			
	A	P205	30.76	45.61			H3PO3	1.5			
	W	NA20	6.15	3.98	22.57						
	W	NI0	0.21	0.16							
	W	AL203	1.03	1.09							
	W	FE203	5.13	8.55							
	W	CR203	0.10	0.16							
	W	RU02	0.04	0.06							
	W	S03	20.50	17.15							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
198					-0.	53.84			6.	2.50	3
	A	LI2O	18.17	6.30			LI OH-H2O	1.1			
	A	CAO	6.38	4.15			CA (NO3)2-4H2O	.20			
	A	AL2O3	7.97	9.43			AL2O3	.50			
	A	P2O5	15.94	26.27			H3PO3	1.0			
	W	NA2O	9.56	6.88							
	W	NIO	0.32	0.28							
	W	AL2O3	1.59	1.89	11.32						
	W	FE2O3	7.97	14.78							
	W	CR2O3	0.16	0.28							
	W	RUO2	0.06	0.10							
	W	S03	31.88	29.64							
199					1000.	36.67			3.	2.51	3
	A	LI2O	25.44	9.04			LI OH-H2O	2.3			
	A	CAO	8.48	5.65			CA (NO3)2-4H2O	.40			
	A	AL2O3	10.60	12.85			AL2O3	1.0			
	A	P2O5	21.20	35.78			H3PO3	2.0			
	W	NA2O	6.36	4.69							
	W	NIO	0.21	0.19							
	W	AL2O3	1.06	1.29	14.14						
	W	FE2O3	5.30	10.06							
	W	CR2O3	0.11	0.19							
	W	RUO2	0.04	0.07							
	W	S03	21.20	20.19							
200					950.	28.01			3.	2.53	3
	A	LI2O	27.57	9.78			LI OH-H2O	3.4			
	A	CAO	9.73	6.48			CA (NO3)2-4H2O	.60			
	A	AL2O3	12.16	14.73			AL2O3	1.5			
	A	P2O5	24.32	41.00			H3PO3	3.1			
	W	NA2O	4.86	3.58							
	W	NIO	0.16	0.14							
	W	AL2O3	0.81	0.98	15.71						
	W	FE2O3	4.05	7.69							
	W	CR2O3	0.08	0.15							
	W	RUO2	0.03	0.05							
	W	S03	16.22	15.42							
201					900.	22.56			3.	2.53	3
	A	LI2O	29.80	10.66			LI OH-H2O	4.6			
	A	CAO	10.37	6.96			CA (NO3)2-4H2O	.80			
	A	AL2O3	12.96	15.81			AL (NO3)3-9H2O	2.0			
	A	P2O5	25.92	44.02			H3PO3	4.1			
	W	NA2O	3.89	2.88							
	W	NIO	0.13	0.12							
	W	AL2O3	0.65	0.79	16.60						
	W	FE2O3	3.24	6.19							
	W	CR2O3	0.06	0.12							
	W	RUO2	0.03	0.04							
	W	S03	12.96	12.42							
202					850.	32.50			3.	2.51	3
	A	LI2O	24.54	8.68			LI OH-H2O	2.5			
	A	NA2O	13.22	9.69			NAOH	1.4			
	A	AL2O3	9.44	11.39			AL (NO3)3-9H2O	1.0			
	A	FE2O3	1.51	2.85			FE (NO3)3-9H2O	.16			
	A	P2O5	20.77	34.89			H3PO4	2.3			
	W	NA2O	5.66	4.15	13.85						
	W	NIO	0.19	0.17							
	W	AL2O3	0.94	1.14	12.53						
	W	FE2O3	4.72	8.92	11.77						
	W	CR2O3	0.09	0.17							
	W	RUO2	0.04	0.06							
	W	S03	18.88	17.89							
203					850.	33.45			5.	2.47	3
	A	LI2O	24.92	8.93			LI OH-H2O	2.5			
	A	NA2O	13.42	9.98			NAOH	1.4			
	A	AL2O3	9.58	11.72			AL (NO3)3-9H2O	1.0			
	A	P2O5	21.08	35.91			H3PO4	2.3			
	W	NA2O	5.75	4.28	14.25						
	W	NIO	0.19	0.17							
	W	AL2O3	0.96	1.17	12.90						
	W	FE2O3	4.79	9.18							
	W	CR2O3	0.10	0.17							
	W	RUO2	0.04	0.06							
	W	S03	19.17	18.41							
204					850.	45.19			3.	2.58	4
	A	P2O5	40.32	54.81			H3PO3	.60			
	W	NA2O	40.32	23.93							
	W	NIO	0.81	0.58							
	W	AL2O3	13.44	13.12							
	W	FE2O3	3.36	5.14							
	W	CR2O3	0.40	0.59							
	W	P2O5	1.34	1.83	56.64						

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W ₀	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
205					850.	38.84			3.	2.57	4
	A	CAO	11.19	6.20			CA(OH)2	.10			
	A	P205	39.15	54.96			H3PO3	.70			
	W	NA2O	33.56	20.57							
	W	NiO	0.67	0.50							
	W	AL2O3	11.19	11.28							
	W	FE2O3	2.80	4.42							
	W	CR2O3	0.34	0.50							
	W	P205	1.12	1.57	56.53						
206					1100.	31.83			1.	2.79	4
	A	AL2O3	23.95	23.11			AL(N03)3-9H2O	.50			
	A	P205	33.52	45.05			H3PO3	.70			
	W	NA2O	28.74	16.86							
	W	NiO	0.57	0.41							
	W	AL2O3	9.58	9.25	32.36						
	W	FE2O3	2.39	3.62							
	W	CR2O3	0.29	0.41							
	W	P205	0.96	1.29	46.34						
207					800.	27.12			4.	3.35	4
	A	PBO	20.12	34.49			PB(N03)2	.20			
	A	P205	35.21	38.39			H3PO3	.70			
	W	NA2O	30.18	14.37							
	W	NiO	0.60	0.35							
	W	AL2O3	10.06	7.88							
	W	FE2O3	2.52	3.08							
	W	CR2O3	0.40	0.35							
	W	P205	1.01	1.10	39.48						
208					850.	28.65			4.	3.08	4
	A	AL2O3	14.37	12.49			AL(N03)3-9H2O	.30			
	A	PBO	9.58	18.24			PB(N03)2	.10			
	A	P205	33.52	40.59			H3PO3	.70			
	W	NA2O	28.74	15.19							
	W	NiO	0.57	0.37							
	W	AL2O3	9.58	8.33	20.82						
	W	FE2O3	2.39	3.26							
	W	CR2O3	0.29	0.37							
	W	P205	0.96	1.16	41.75						
209					1050.	34.39			3.	2.64	4
	A	AL2O3	10.59	9.99			AL(N03)3-9H2O	.20			
	A	P205	42.37	55.62			H3PO3	.80			
	W	NA2O	31.78	18.21							
	W	NiO	0.64	0.44							
	W	AL2O3	10.59	9.99	19.98						
	W	FE2O3	2.65	3.91							
	W	CR2O3	0.32	0.45							
	W	P205	1.06	1.39	57.01						
210					850.	26.26			3.	3.31	4
	A	PBO	19.53	33.39			PB(N03)2	.20			
	A	P205	37.11	40.35			H3PO4	.75			
	W	NA2O	29.30	13.91							
	W	NiO	0.59	0.34							
	W	AL2O3	9.77	7.63							
	W	FE2O3	2.44	2.99							
	W	CR2O3	0.29	0.34							
	W	P205	0.98	1.06	41.41						
211					900.	23.29			3.	3.17	4
	A	PBO	17.48	29.62			PB(N03)2	.20			
	A	P205	43.71	47.09			H3PO4	1.0			
	W	NA2O	26.22	12.34							
	W	NiO	0.52	0.30							
	W	AL2O3	8.74	6.76							
	W	FE2O3	2.19	2.65							
	W	CR2O3	0.26	0.30							
	W	P205	0.87	0.94	48.03						
212					800.	40.74			3.	3.46	4
	A	PBO	14.40	25.38			PB(N03)2	.30			
	A	P205	30.23	33.89			H3PO4	1.3			
	W	NA2O	14.40	7.05							
	W	NiO	0.29	0.17							
	W	AL2O3	38.87	31.30							
	W	FE2O3	1.20	1.51							
	W	CR2O3	0.14	0.17							
	W	P205	0.48	0.54	34.43						
213					700.	16.83			1.	3.20	4
	A	PBO	20.08	32.11			PB(N03)2	.30			
	A	P205	50.20	51.05			H3PO4	1.5			
	W	NA2O	20.08	8.92							
	W	NiO	0.40	0.21							
	W	AL2O3	6.69	4.89							
	W	FE2O3	1.67	1.91							
	W	CR2O3	0.20	0.22							
	W	P205	0.67	0.68	51.73						

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
214	A	P205	52.97	66.91	900.	33.09	H3P04	1.0	4.	2.53	4
	W	NA20	31.78	17.53							
	W	NIO	0.64	0.42							
	W	AL203	10.59	9.61							
	W	FE203	2.65	3.76							
	W	CR203	0.32	0.43							
	W	P205	1.06	1.34	68.24						
215	A	P205	62.81	75.20	550.	24.80	H3P04	1.5	4.	2.49	4
	W	NA20	25.13	13.13							
	W	NIO	0.50	0.32							
	W	AL203	8.38	7.20							
	W	FE203	2.09	2.82							
	W	CR203	0.25	0.32							
	W	P205	0.84	1.00	76.20						
216	A	P80	14.35	23.97	650.	18.85	PB (N03)2	.20	1.	2.98	4
	A	P205	53.80	57.17			H3P04	1.5			
	W	NA20	21.52	9.99							
	W	NIO	0.43	0.24							
	W	AL203	7.17	5.48							
	W	FE203	1.79	2.14							
	W	CR203	0.22	0.24							
	W	P205	0.72	0.76	57.94						
217	A	AL203	3.24	2.39	900.	16.43	AL (N03)3-9H2O	.10	3.	3.21	4
	A	P80	19.43	31.35			PB (N03)2	.30			
	A	P205	48.58	49.84			H3P04	1.5			
	W	NA20	19.43	8.70							
	W	NIO	0.39	0.21							
	W	AL203	6.48	4.77	7.16						
	W	FE203	1.62	1.87							
	W	CR203	0.19	0.21							
	W	P205	0.65	0.66	50.50						
218	A	AL203	6.27	4.66	950.	16.05	AL (N03)3-9H2O	.20	3.	3.23	4
	A	P80	18.82	30.61			PB (N03)2	.30			
	A	P205	47.05	48.67			H3P04	1.5			
	W	NA20	18.82	8.50							
	W	NIO	0.38	0.20							
	W	AL203	6.27	4.66	9.32						
	W	FE203	1.57	1.83							
	W	CR203	0.19	0.21							
	W	P205	0.63	0.65	49.32						
219	A	AL203	11.16	9.75	1000.	22.38	AL (N03)3-9H2O	.30	3.	2.58	4
	A	P205	55.80	67.87			H3P04	1.5			
	W	NA20	22.32	11.85							
	W	NIO	0.45	0.29							
	W	AL203	7.44	6.50	16.25						
	W	FE203	1.86	2.55							
	W	CR203	0.22	0.29							
	W	P205	0.74	0.90	68.77						
220	A	AL203	13.71	12.60	925.	28.92	AL (N03)3-9H2O	.30	3.	2.65	4
	A	P205	45.70	58.48			H3P04	1.0			
	W	NA20	27.42	15.32							
	W	NIO	0.55	0.37							
	W	AL203	9.14	8.40	21.00						
	W	FE203	2.29	3.29							
	W	CR203	0.27	0.38							
	W	P205	0.91	1.17	59.65						
221	A	AL203	8.52	7.57	1000.	26.06	AL (N03)3-9H2O	.20	3.	2.58	4
	A	P205	53.66	66.38			H3P04	1.3			
	W	NA20	25.55	13.80							
	W	NIO	0.51	0.37							
	W	AL203	8.52	7.57	15.14						
	W	FE203	2.13	2.96							
	W	CR203	0.26	0.34							
	W	P205	0.85	1.05	67.43						
222	A	P80	25.09	38.68	750.	15.21	PB (N03)2	.40	3.	3.39	4
	A	P205	47.05	46.12			H3P04	1.5			
	W	NA20	18.82	8.05							
	W	NIO	0.38	0.19							
	W	AL203	6.27	4.42							
	W	FE203	1.57	1.73							
	W	CR203	0.19	0.20							
	W	P205	0.63	0.61	46.73						

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
223					750.	13.87			3.	3.57	4
	A	PB0	29.52	44.08			PB (NO3)2	.50			
	A	P205	44.27	42.05			H3PO4	1.5			
	W	NA20	17.71	7.34							
	W	N10	0.35	0.18							
	W	AL203	5.90	4.03							
	W	FE203	1.48	1.58							
	W	CR203	0.18	0.18							
	W	P205	0.59	0.56	42.61						
224					900.	16.83			4.	3.20	4
	A	PB0	20.08	32.11			PB (NO3)2	.30			
	A	P205	50.20	51.05			H3PO4	1.5			
	W	NA20	20.08	8.92							
	W	N10	0.40	0.21							
	W	AL203	6.69	4.89							
	W	FE203	1.67	1.91							
	W	CR203	0.20	0.22							
	W	P205	0.67	0.68	51.73						
225					750.	16.72			4.	3.18	4
	A	LI20	3.24	0.71			LI OH-H2O	.10			
	A	PB0	19.43	31.88			PB (NO3)2	.30			
	A	P205	48.58	50.69			H3PO4	1.5			
	W	NA20	19.43	8.85							
	W	N10	0.39	0.21							
	W	AL203	6.48	4.85							
	W	FE203	1.62	1.90							
	W	CR203	0.19	0.22							
	W	P205	0.65	0.68	51.37						
226					900.	16.48			5.	3.19	4
	A	LI20	3.18	0.70			LI OH-H2O	.10			
	A	AL203	1.91	1.44			AL (NO3)3-9H2O	.05			
	A	PB0	19.06	31.43			PB (NO3)2	.30			
	A	P205	47.65	49.96			H3PO4	1.5			
	W	NA20	19.06	8.73							
	W	N10	0.38	0.21							
	W	AL203	6.35	4.78	6.22						
	W	FE203	1.59	1.87							
	W	CR203	0.19	0.21							
	W	P205	0.64	0.67	50.63						
227					950.	18.55			5.	2.99	4
	A	AL203	2.11	1.62			AL (NO3)3-9H2O	.05			
	A	PB0	14.04	23.59			PB (NO3)2	.20			
	A	P205	52.67	56.25			H3PO4	1.5			
	W	NA20	21.07	9.82							
	W	N10	0.42	0.24							
	W	AL203	7.02	5.39	7.00						
	W	FE203	1.76	2.11							
	W	CR203	0.21	0.24							
	W	P205	0.70	0.75	57.00						
228					750.	18.70			1.	2.97	4
	A	LI20	3.46	0.80			LI OH-H2O	.10			
	A	PB0	13.85	23.78			PB (NO3)2	.20			
	A	P205	51.94	56.72			H3PO4	1.5			
	W	NA20	20.78	9.91							
	W	N10	0.42	0.24							
	W	AL203	6.93	5.43							
	W	FE203	1.73	2.13							
	W	CR203	0.21	0.24							
	W	P205	0.69	0.76	57.47						
229					850.	18.40			5.	2.98	4
	A	LI20	3.39	0.78			LI OH-H2O	.10			
	A	AL203	2.04	1.60			AL (NO3)3-9H2O	.05			
	A	PB0	13.57	23.40			PB (NO3)2	.20			
	A	P205	50.88	55.81			H3PO4	1.5			
	W	NA20	20.35	9.75							
	W	N10	0.41	0.23							
	W	AL203	6.78	5.34	6.95						
	W	FE203	1.70	2.09							
	W	CR203	0.20	0.24							
	W	P205	0.68	0.74	56.55						
230					700.	24.54			3.	2.48	4
	A	LI20	4.02	1.04			LI OH-H2O	.10			
	A	P205	60.29	74.42			H3PO4	1.5			
	W	NA20	24.12	13.00							
	W	N10	0.48	0.31							
	W	AL203	8.04	7.13							
	W	FE203	2.01	2.79							
	W	CR203	0.24	0.32							
	W	P205	0.80	0.99	75.41						
231					700.	21.23			3.	2.74	4
	A	LI20	3.72	0.90			LI OH-H2O	.10			
	A	PB0	7.44	13.50			PB (NO3)2	.10			
	A	P205	55.80	64.37			H3PO4	1.5			
	W	NA20	22.32	11.24							
	W	N10	0.45	0.27							
	W	AL203	7.44	6.17							
	W	FE203	1.86	2.41							
	W	CR203	0.22	0.28							
	W	P205	0.74	0.86	65.23						

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W ₀	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
232					850.	24.54				2.48	4
	A	Li2O	4.02	1.04			LiOH-H2O	.10	1.		
	A	P2O5	60.29	74.42			H3PO4	1.5			
	W	Na2O	24.12	13.00							
	W	NiO	0.48	0.31							
	W	Al2O3	8.04	7.13							
	W	Fe2O3	2.01	2.79							
	W	Cr2O3	0.24	0.32							
	W	P2O5	0.80	0.99	75.41						
233					950.	46.03				2.58	4
	A	P2O5	39.51	53.97			H3PO4	.59	1.		
	W	Na2O	40.87	24.38							
	W	NiO	0.82	0.59							
	W	Al2O3	13.62	13.37							
	W	Fe2O3	3.41	5.23							
	W	Cr2O3	0.41	0.60							
	W	P2O5	1.36	1.86	55.83						
234					650.	27.26				2.50	4
	A	P2O5	59.78	72.74			H3PO4	1.3	5.		
	W	Na2O	27.17	14.44							
	W	NiO	0.54	0.35							
	W	Al2O3	9.06	7.92							
	W	Fe2O3	2.26	3.10							
	W	Cr2O3	0.27	0.35							
	W	P2O5	0.91	1.10	73.84						
235					650.	22.54				2.48	4
	A	P2O5	65.69	77.46			H3PO4	1.7	5.		
	W	Na2O	23.18	11.94							
	W	NiO	0.46	0.29							
	W	Al2O3	7.73	6.55							
	W	Fe2O3	1.93	2.56							
	W	Cr2O3	0.23	0.29							
	W	P2O5	0.77	0.91	78.37						
236					800.	38.21				2.55	4
	A	P2O5	47.39	61.79			H3PO4	.80	4.		
	W	Na2O	35.55	20.24							
	W	NiO	0.71	0.49							
	W	Al2O3	11.05	11.10							
	W	Fe2O3	2.96	4.35							
	W	Cr2O3	0.36	0.50							
	W	P2O5	1.18	1.54	63.34						
237					900.	63.85				2.67	4
	A	P2O5	23.97	36.15			H3PO4	.28	3.		
	W	Na2O	51.37	33.82							
	W	NiO	1.03	0.82							
	W	Al2O3	17.12	18.55							
	W	Fe2O3	4.28	7.26							
	W	Cr2O3	0.51	0.83							
	W	P2O5	1.71	2.58	38.73						
238					950.	32.75				2.64	5
	A	Na2O	34.07	22.18			NaOH	1.8	1.		
	A	B2O3	8.86	6.48			Na2B4O7-H2O	.13			
	A	P2O5	25.89	38.60			H3PO3	1.5			
	W	Na2O	1.70	1.11	23.28						
	W	Al2O3	29.30	31.37							
	W	Fe2O3	0.10	0.17							
	W	RUO2	0.07	0.10							
239					950.	32.97				2.65	5
	A	Na2O	33.39	21.65			NaOH	.16	1.		
	A	B2O3	8.95	6.52			Na2B4O7-H2O	.13			
	A	P2O5	26.16	18.86			NaH2PO2-H2O	1.5			
	W	Na2O	1.72	1.12	22.77						
	W	Al2O3	29.60	31.58							
	W	Fe2O3	0.10	0.17							
	W	RUO2	0.07	0.10							
240					-0.	29.53				2.56	5
	A	Na2O	35.35	23.99			NaOH	.42	6.		
	A	B2O3	15.32	11.68			Na2B4O7-H2O	.26			
	A	P2O5	22.39	34.80			NaH2PO2-H2O	1.5			
	W	Na2O	1.47	1.00	24.99						
	W	Al2O3	25.33	28.29							
	W	Fe2O3	0.09	0.15							
	W	RUO2	0.06	0.09							
241					-0.	45.90				2.90	5
	A	P2O5	45.37	54.10			H3PO3	1.5	6.		
	W	Na2O	7.99	1.55							
	W	Al2O3	51.54	43.97							
	W	Fe2O3	0.18	0.24							
	W	RUO2	0.12	0.13							
242					1100.	37.13				2.76	5
	A	Li2O	31.21	19.11			NaOH	1.5	4.		
	A	P2O5	31.21	43.76			H3PO3	1.5			
	W	Na2O	2.05	1.26							
	W	Al2O3	35.32	35.57							
	W	Fe2O3	0.12	0.19							
	W	RUO2	0.08	0.11							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP. PORE FREE D.	WASTE TYPE	
243	A	LI20	35.35	23.99	1100.	29.53	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.42 .26 1.5	1.	2.56	5
	A	B203	15.32	11.68							
	A	P205	22.39	34.80							
	W	NA2O	1.47	1.00							
	W	AL2O3	25.33	28.29							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.09							
244	A	LI20	34.31	20.98	1100.	30.98	NAH2PO2-H2O	2.0	4.	2.68	5
	A	P205	34.31	48.04							
	W	NA2O	1.72	1.05							
	W	AL2O3	29.50	29.68							
	W	FE2O3	0.10	0.16							
	W	RUO2	0.07	0.09							
	245	A	LI20	35.56							
A		B203	7.70	5.55							
A		P205	29.63	43.55							
W		NA2O	1.48	0.95							
W		AL2O3	25.48	26.90							
W		FE2O3	0.09	0.15							
W		RUO2	0.06	0.08							
246	A	NA2O	37.93	26.82	-0.	26.40	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.68 .39 1.5	6.	2.49	5
	A	B203	19.72	15.67							
	A	P205	19.22	31.12							
	W	NA2O	1.26	0.89							
	W	AL2O3	21.74	25.29							
	W	FE2O3	0.08	0.14							
	W	RUO2	0.05	0.08							
247	A	NA2O	32.77	20.05	1100.	34.03	NAH2PO2-H2O NAH2PO4-H2O	1.5 .13	1.	2.72	5
	A	P205	32.77	45.92							
	W	NA2O	1.88	1.15							
	W	AL2O3	32.39	32.60							
	W	FE2O3	0.11	0.18							
	W	RUO2	0.08	0.10							
248	A	NA2O	34.98	21.94	1000.	29.46	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.03 .07 2.0	1.	2.64	5
	A	B203	4.13	2.91							
	A	P205	31.80	45.69							
	W	NA2O	1.59	1.00							
	W	AL2O3	27.34	28.22							
	W	FE2O3	0.10	0.15							
	W	RUO2	0.06	0.09							
249	A	NA2O	27.51	18.27	-0.	45.73	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.16 .13 .76	6.	2.78	5
	A	B203	12.12	9.05							
	A	P205	17.72	26.95							
	W	NA2O	2.33	1.55							
	W	AL2O3	40.09	43.81							
	W	FE2O3	0.14	0.24							
	W	RUO2	0.09	0.13							
250	A	NA2O	35.56	22.82	1000.	28.08	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.16 .13 2.0	1.	2.60	5
	A	B203	7.70	5.55							
	A	P205	29.63	43.55							
	W	NA2O	1.48	0.95							
	W	AL2O3	25.48	26.90							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.08							
251	A	NA2O	34.98	21.94	1000.	29.46	NAOH NA2B4O7-10H2O NAH2PO2-H2O	.03 .07 2.0	1.	2.64	5
	A	B203	4.13	2.91							
	A	P205	31.80	45.69							
	W	NA2O	1.59	1.00							
	W	AL2O3	27.34	28.22							
	W	FE2O3	0.10	0.15							
	W	RUO2	0.06	0.09							
252	A	NA2O	29.11	18.97	1100.	28.02	NAOH SI O2 NAH2PO2-H2O	.06 .52 2.0	1.	2.64	5
	A	SI O2	15.14	9.56							
	A	P205	29.11	43.45							
	W	NA2O	1.46	0.95							
	W	AL2O3	25.04	26.84							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.08							
253	A	NA2O	48.16	32.68	-0.	25.40	NAOH NA2B4O7-10H2O NAH2PO2-H2O	1.7 .07 2.0	6.	2.58	5
	A	B203	3.30	2.51							
	A	P205	25.35	39.40							
	W	NA2O	1.27	0.86							
	W	AL2O3	21.80	24.34							
	W	FE2O3	0.08	0.13							
	W	RUO2	0.05	0.07							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
254					1100.	28.97			1.	2.64	5
	A	NA2O	30.82	19.62			NAOH	.03			
	A	B2O3	2.16	1.54			NA2B4O7-10H2O	.03			
	A	SiO2	8.01	4.94			SiO2	.26			
	A	P2O5	30.82	44.93			NAH2PO2-H2O	2.0			
	W	NA2O	1.54	0.98	20.60						
	W	AL2O3	26.50	27.75							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.08							
255					1000.	28.34			1.	2.61	5
	A	NA2O	32.79	21.11			NAH2PO2-H2O	2.0			
	A	MGO	2.38	1.00			MGO	.08			
	A	B2O3	7.75	5.61			NA2B4O7-10H2O	.13			
	A	P2O5	29.81	43.95							
	W	NA2O	1.49	0.96	22.07						
	W	AL2O3	25.63	27.15							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.08							
256					1025.	29.38			1.	2.64	5
	A	NA2O	34.76	21.89			NAH2PO2-H2O	2.0			
	A	MGO	0.63	0.26			MGO	.02			
	A	B2O3	4.11	2.91			NA2B4O7-10H2O	.07			
	A	P2O5	31.60	45.57							
	W	NA2O	1.58	0.99	22.88						
	W	AL2O3	27.17	28.15							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.09							
257					1025.	29.92			1.	2.65	5
	A	NA2O	34.56	21.72			NAH2PO2-H2O	2.0			
	A	MGO	0.63	0.26			MGO	.02			
	A	B2O3	4.08	2.88			NA2B4O7-10H2O	.07			
	A	P2O5	31.42	45.22							
	W	NA2O	1.57	0.99	22.71						
	W	AL2O3	27.02	27.93							
	W	FE2O3	0.09	0.15							
	W	RUO2	0.06	0.08							
258					1025.	44.07			1.	2.81	5
	A	NA2O	26.70	17.01			NAOH	1.0			
	A	MGO	0.94	0.39			MGO	.02			
	A	B2O3	6.09	4.36			NA2B4O7-10H2O	.07			
	A	P2O5	23.42	34.17			H3PO3	1.0			
	W	NA2O	2.34	1.49	18.50						
	W	AL2O3	40.28	42.22							
	W	FE2O3	0.14	0.23							
	W	RUO2	0.09	0.13							
259					1050.	25.02			4.	2.75	5
	A	NA2O	33.10	20.33			NAOH	.16			
	A	B2O3	7.17	4.95			NA2B4O7-10H2O	.13			
	A	FE2O3	6.90	10.91			FE (NO3)3-9H2O	.50			
	A	P2O5	27.59	38.80			NAH2PO2-H2O	2.0			
	W	NA2O	1.38	0.85	21.17						
	W	AL2O3	23.72	23.97							
	W	FE2O3	0.08	0.13	11.04						
	W	RUO2	0.06	0.07							
260					-0.	34.16			6.	2.68	5
	A	NA2O	21.18	18.74			NAOH	1.6			
	A	SiO2	54.90	47.10			SiO2	5.2			
	W	NA2O	1.31	1.16	19.89						
	W	AL2O3	22.48	32.73							
	W	FE2O3	0.08	0.18							
	W	RUO2	0.05	0.10							
261					-0.	20.95			6.	4.18	5
	A	NA2O	25.54	14.19			NA2SiO3-9H2O	1.0			
	A	SiO2	25.54	13.76			PB (NO3)2	1.0			
	A	PBO	25.54	51.10							
	W	NA2O	1.28	0.71	14.90						
	W	AL2O3	21.97	20.07							
	W	FE2O3	0.08	0.11							
	W	RUO2	0.05	0.06							
262					-0.	29.01			6.	2.63	5
	A	NA2O	38.31	29.46			NAH2PO2-H2O	1.0			
	A	SiO2	25.54	19.04			NA2SiO3-9H2O	1.0			
	A	P2O5	12.77	22.49							
	W	NA2O	1.28	0.98	30.44						
	W	AL2O3	21.97	27.79							
	W	FE2O3	0.08	0.15							
	W	RUO2	0.05	0.08							
263					1100.	26.06			1.	3.00	5
	A	NA2O	31.60	17.64			NAH2PO2-H2O	2.0			
	A	PBO	7.90	15.89			PB (NO3)2	.25			
	A	P2O5	31.60	40.41							
	W	NA2O	1.58	0.88	18.53						
	W	AL2O3	27.17	24.96							
	W	FE2O3	0.09	0.14							
	W	RUO2	0.06	0.08							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
264	A	NA20	34.83	22.06	1100.	27.15	NAOH	.16	1.	2.64	5
	A	B203	7.55	5.37			NA2B4O7-H2O	.13			
	A	FE203	2.03	3.32			FE (NO3)3-9H2O	.13			
	A	P205	29.03	42.10			NAH2P02-H2O	2.0			
	W	NA20	1.45	0.92	22.98						
	W	AL203	24.96	26.01							
	W	FE203	0.09	0.14	3.46						
	W	RU02	0.06	0.08							
265	A	NA20	32.10	18.47	1050.	27.27	NAH2P02-H2O	2.0	3.	2.89	5
	A	FE203	2.25	3.33			FE (NO3)3-9H2O	.13			
	A	PB0	4.17	8.64			PB (NO3)2	.13			
	A	P205	32.10	42.29							
	W	NA20	1.61	0.92	19.39						
	W	AL203	27.61	26.12							
	W	FE203	0.10	0.14	3.47						
	W	RU02	0.06	0.08							
266	A	NA20	32.52	19.46	1050.	28.74	NAH2P02-H2O	2.0	3.	2.76	5
	A	B203	2.28	1.53			NA2B4O7-H2O	.03			
	A	FE203	0.98	1.50			FE (NO3)3-9H2O	.06			
	A	PB0	1.95	4.20			PB (NO3)2	.06			
	A	P205	32.52	44.57							
	W	NA20	1.63	0.97	20.43						
	W	AL203	27.97	27.53							
	W	FE203	0.10	0.15	1.65						
	W	RU02	0.07	0.08							
267	A	NA20	33.28	19.76	1050.	29.18	NAH2P02-H2O	2.0	1.	2.78	5
	A	FE203	1.00	1.53			FE (NO3)3-9H2O	.06			
	A	PB0	2.00	4.27			PB (NO3)2	.06			
	A	P205	33.28	45.26							
	W	NA20	1.66	0.99	20.75						
	W	AL203	28.62	27.96							
	W	FE203	0.10	0.15	1.68						
	W	RU02	0.07	0.08							
268	A	NA20	32.84	19.10	1000.	28.21	NAH2P02-H2O	2.0	4.	2.85	5
	A	PB0	4.27	8.94			PB (NO3)2	.13			
	A	P205	32.84	43.75							
	W	NA20	1.64	0.96	20.06						
	W	AL203	28.24	27.02							
	W	FE203	0.10	0.15							
	W	RU02	0.07	0.08							
269	A	NA20	32.21	18.34	1050.	27.09	NAH2P02-H2O	2.0	1.	2.92	5
	A	PB0	6.12	12.55			PB (NO3)2	.19			
	A	P205	32.21	42.01							
	W	NA20	1.61	0.92	19.26						
	W	AL203	27.70	25.95							
	W	FE203	0.10	0.14							
	W	RU02	0.06	0.08							
270	A	PB0	11.55	19.29	-0.	31.64	P3O	.25	6.	3.22	5
	A	P205	46.19	49.07			H3P02	2.0			
	W	NA20	2.31	1.07							
	W	AL203	39.72	30.31							
	W	FE203	0.14	0.17							
	W	RU02	0.09	0.09							
271	A	P205	52.22	60.80	-0.	39.20	H3P02	2.0	6.	2.82	5
	W	NA20	2.61	1.33							
	W	AL203	44.91	37.56							
	W	FE203	0.16	0.21							
	W	RU02	0.10	0.11							
272	A	NA20	31.60	17.64	1000.	26.06	NAH2P02-H2O	2.0	1.	3.00	5
	A	PB0	7.90	15.89			PB0	.25			
	A	P205	31.60	40.41							
	W	NA20	1.58	0.88	18.53						
	W	AL203	27.17	24.96							
	W	FE203	0.09	0.14							
	W	RU02	0.06	0.08							
273	A	LI2O	34.98	11.93	-0.	33.24	LI OH-H2O	2.2	6.	2.64	5
	A	B203	4.13	3.29			B2O3	.13			
	A	P205	31.80	51.54			H3P04	2.0			
	W	NA20	1.59	1.13							
	W	AL203	27.34	31.84							
	W	FE203	0.10	0.17							
	W	RU02	0.06	0.10							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
274	A	LI20	31.60	9.36	-0.	28.68	LI OH-H2O	2.0	6.	3.05	5
	A	P80	7.90	17.48			P80	.25			
	A	P205	31.60	44.48			H3PO4	2.0			
	W	NA20	1.58	0.97							
	W	AL203	27.17	27.47							
	W	FE203	0.09	0.15							
	W	RU02	0.06	0.08							
275	A	LI20	33.28	11.72	1050.	37.39	LI OH-H2O	1.9	3.	2.66	5
	A	B203	9.01	7.40			B203	.26			
	A	P205	26.00	43.49			H3PO4	1.5			
	W	NA20	1.73	1.27							
	W	AL203	29.81	35.82							
	W	FE203	0.10	0.20							
	W	RU02	0.07	0.11							
276	A	LI20	35.56	12.47	1050.	31.84	LI OH-H2O	2.4	3.	2.60	5
	A	B203	7.70	6.30			B203	.26			
	A	P205	29.63	49.38			H3PO4	2.0			
	W	NA20	1.48	1.08							
	W	AL203	25.48	30.51							
	W	FE203	0.09	0.17							
	W	RU02	0.06	0.09							
277	A	K20	34.98	29.93	1050.	26.44	K2O3	2.2	1.	2.61	5
	A	B203	4.13	2.62			B203	.13			
	A	P205	31.80	41.01			H3PO4	2.0			
	W	NA20	1.59	0.90							
	W	AL203	27.34	25.33							
	W	FE203	0.10	0.14							
	W	RU02	0.06	0.08							
278	A	K20	31.60	24.56	1150.	23.87	KN03	2.0	5.	2.94	5
	A	P80	7.90	14.55			P80	.25			
	A	P205	31.60	37.02			H3PO4	2.0			
	W	NA20	1.58	0.81							
	W	AL203	27.17	22.87							
	W	FE203	0.09	0.12							
	W	RU02	0.06	0.07							
279	A	K20	33.28	29.50	1050.	29.86	KN03	1.9	1.	2.62	5
	A	B203	9.01	5.91			B203	.26			
	A	P205	26.00	34.73			H3PO4	1.5			
	W	NA20	1.73	1.01							
	W	AL203	29.81	28.61							
	W	FE203	0.10	0.16							
	W	RU02	0.07	0.09							
280	A	K20	35.56	31.00	1050.	25.10	KN03	2.4	3.	2.58	5
	A	B203	7.70	4.97			B203	.26			
	A	P205	29.63	38.93			H3PO4	2.0			
	W	NA20	1.48	0.85							
	W	AL203	25.48	24.05							
	W	FE203	0.09	0.13							
	W	RU02	0.06	0.07							
281	A	NA20	29.28	16.91	950.	24.98	NAOH	2.1	3.	2.62	5
	A	P205	43.92	58.11			H3PO4	3.1			
	W	NA20	1.46	0.85	17.76						
	W	AL203	25.18	23.93							
	W	FE203	0.09	0.13							
	W	RU02	0.06	0.07							
282	A	NA20	38.78	23.14	1000.	16.28	NAOH	2.2	3.	2.52	5
	A	P205	44.32	60.58			H3PO4	4.7			
	W	NA20	0.92	0.55	23.70						
	W	AL203	15.88	15.59							
	W	FE203	0.06	0.09							
	W	RU02	0.04	0.05							
283	A	NA20	31.27	17.43	1050.	12.25	NAOH	2.3	1.	2.48	5
	A	P205	55.10	70.32			H3PO4	7.4			
	W	NA20	0.74	0.41	17.84						
	W	AL203	12.81	11.74							
	W	FE203	0.04	0.06							
	W	RU02	0.03	0.04							
284	A	NA20	27.07	17.35	900.	33.28	NAOH	1.7	1.	2.63	5
	A	B203	14.06	10.13			NA2B4O7-H2O	.20			
	A	P205	26.71	39.23			H3PO4	1.5			
	W	NA20	1.76	1.13	18.48						
	W	AL203	30.23	31.89							
	W	FE203	0.11	0.17							
	W	RU02	0.07	0.10							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
285					1050.	32.73			1.	2.60	5
	A	NA20	24.44	15.74			NAOH	1.7			
	A	B203	17.90	12.95			NA2B407-10H20	.26			
	A	P205	26.16	38.58			H3P04	1.5			
	W	NA20	1.72	1.11							
	W	AL203	29.60	31.36		16.85					
	W	FE203	0.10	0.17							
	W	RU02	0.07	0.10							
286					1050.	30.10			1.	2.55	5
	A	NA20	29.53	19.77			NAOH	1.3			
	A	B203	19.48	14.66			NA2B407-10H20	.32			
	A	P205	23.14	35.48			H3P04	1.5			
	W	NA20	1.52	1.02		20.79					
	W	AL203	26.18	28.83							
	W	FE203	0.09	0.16							
	W	RU02	0.06	0.09							
287					1050.	25.12			3.	2.69	6
	A	NA20	40.69	24.01			NAOH	.26			
	A	B203	4.60	3.05			NA2B407-10H20	.13			
	A	P205	35.39	47.82			NAH2P02-H2O	2.0			
	W	NA20	0.88	0.52		24.53	NAH2P04-H2O	2.0			
	W	NI0	3.18	2.27							
	W	MNO	0.71	0.48							
	W	FE203	11.15	16.95							
	W	CR203	3.36	4.87							
	W	RU02	0.04	0.04							
288					-0.	28.05			6.	2.75	6
	A	NA20	27.94	15.15			NAOH	.26			
	A	B203	5.59	3.41			NA2B407-10H20	.13			
	A	P205	42.99	53.39			H3P04	2.0			
	W	NA20	1.07	0.58		15.74	NAH2P02-H2O	2.0			
	W	NI0	3.87	2.53							
	W	MNO	0.86	0.53							
	W	FE203	13.54	18.92							
	W	CR203	4.08	5.43							
	W	RU02	0.04	0.05							
289					1000.	30.77			3.	2.68	6
	A	NA20	39.28	25.57			NAOH	2.0			
	A	B203	19.64	14.37			H3B03	2.0			
	A	P205	19.64	29.29			NAH2P02-H2O	2.0			
	W	NA20	0.98	0.64		26.21					
	W	NI0	3.53	2.77							
	W	MNO	0.79	0.59							
	W	FE203	12.37	20.76							
	W	CR203	3.73	5.96							
	W	RU02	0.04	0.05							
290					1075.	31.49			3.	2.85	6
	A	NA20	21.78	13.08			NAH2P02-H2O	2.0			
	A	B203	21.78	14.70			H3B03	2.0			
	A	AL203	10.89	10.76			AL (NO3)3-9H2O	1.0			
	A	P205	21.78	29.97							
	W	NA20	1.09	0.65		13.74					
	W	NI0	3.92	2.84							
	W	MNO	0.87	0.60							
	W	FE203	13.72	21.24							
	W	CR203	4.14	6.10							
	W	RU02	0.04	0.06							
291					1100.	27.74			1.	3.06	6
	A	NA20	20.87	11.77			NAH2P02-H2O	2.0			
	A	B203	20.87	13.23			H3B03	2.0			
	A	AL203	10.43	9.68			AL (NO3)3-9H2O	1.0			
	A	PB0	5.22	10.60			PB0	.25			
	A	P205	20.87	26.97							
	W	NI0	3.76	2.55							
	W	MNO	0.83	0.54							
	W	FE203	13.15	19.11							
	W	CR203	3.96	5.49							
	W	RU02	0.04	0.05							
292					1050.	25.09			-0.	3.26	6
	A	NA20	19.83	10.65			NAH2P02-H2O	2.0			
	A	B203	19.83	11.96			H3B03	2.0			
	A	AL203	9.92	8.76			AL (NO3)3-9H2O	1.0			
	A	PB0	9.92	19.17			PB0	.50			
	A	P205	19.83	24.38							
	W	NI0	3.57	2.31							
	W	MNO	0.79	0.49							
	W	FE203	12.50	17.28							
	W	CR203	3.77	4.96							
	W	RU02	0.04	0.05							
293					1050.	25.03			-0.	3.42	6
	A	NA20	22.02	10.62			NAH2P02-H2O	2.0			
	A	AL203	11.01	8.74			ALP04	1.0			
	A	PB0	11.01	19.13			PB0	.50			
	A	P205	33.33	36.49							
	W	NI0	3.96	2.30							
	W	MNO	0.88	0.49							
	W	FE203	13.87	17.24							
	W	CR203	4.18	4.95							
	W	RU02	0.04	0.05							

WASTE STUDIES---QRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
294					1000.	22.84			-0.	3.60	6
	A	NA2O	27.87	9.69			NAH2PO2-H2O	2.0			
	A	AL2O3	10.43	7.97			ALPO4	1.0			
	A	PB0	15.65	26.18			PB0	.75			
	A	P2O5	31.30	33.30							
	W	NIO	3.76	2.10							
	W	MNO	0.83	0.44							
	W	FE2O3	13.15	15.74							
	W	CR2O3	3.96	4.52							
	W	RUO2	0.04	0.04							
295					1050.	24.45			-0.	2.96	6
	A	NA2O	18.90	10.38			NAH2PO2-H2O	2.0			
	A	B2O3	18.90	11.66			H3BO3	2.0			
	A	AL2O3	9.45	8.53			ALPO4	1.0			
	A	PB0	4.72	9.34			PB0	.25			
	A	P2O5	28.34	35.64							
	W	NIO	3.40	2.25							
	W	MNO	0.76	0.48							
	W	FE2O3	11.90	16.84							
	W	CR2O3	3.59	4.84							
	W	RUO2	0.04	0.04							
296					1050.	24.45			-0.	2.96	6
	A	NA2O	18.90	10.38			NAH2PO2-H2O	2.0			
	A	B2O3	18.90	11.66			H3BO3	2.0			
	A	AL2O3	9.45	8.53			ALPO4	1.0			
	A	PB0	4.72	9.34			PB0	.25			
	A	P2O5	28.34	35.64							
	W	NIO	3.40	2.25							
	W	MNO	0.76	0.48							
	W	FE2O3	11.90	16.84							
	W	CR2O3	3.59	4.84							
	W	RUO2	0.04	0.04							
297					1050.	25.96			-0.	3.08	6
	A	NA2O	20.87	11.02			NAH2PO2-H2O	2.0			
	A	B2O3	10.43	6.19			H3BO3	1.0			
	A	AL2O3	10.43	9.06			ALPO4	1.0			
	A	PB0	5.22	9.92			PB0	.25			
	A	P2O5	31.30	37.85							
	W	NIO	3.76	2.39							
	W	MNO	0.83	0.50							
	W	FE2O3	13.15	17.88							
	W	CR2O3	3.96	5.13							
	W	RUO2	0.04	0.05							
298					1070.	14.42			-0.	2.88	6
	A	NA2O	31.44	18.36			NAOH	3.0			
	A	AL2O3	26.20	25.17			NAAlO2	1.0			
	A	P2O5	31.44	42.05			ALPO4	4.0			
	W	NIO	1.89	1.33			NAH2PO2-H2O	2.0			
	W	MNO	0.42	0.28							
	W	FE2O3	6.60	9.93							
	W	CR2O3	1.99	2.85							
	W	RUO2	0.02	0.03							
299					-0.	15.88			6.	2.96	6
	A	NA2O	18.65	10.11			NAAlO2	1.0			
	A	AL2O3	31.09	27.71			ALPO4	4.0			
	A	P2O5	37.30	46.30			NAH2PO2-H2O	2.0			
	W	NIO	2.24	1.46							
	W	MNO	0.50	0.31							
	W	FE2O3	7.83	10.94							
	W	CR2O3	2.36	3.14							
	W	RUO2	0.02	0.03							
300					-0.	14.60			-0.	2.76	6
	A	NA2O	26.20	15.49			NAOH	3.0			
	A	B2O3	10.48	6.96			B2O3	1.0			
	A	AL2O3	20.96	20.38			ALPO4	4.0			
	A	P2O5	31.44	42.57			NAH2PO2-H2O	2.0			
	W	NIO	1.89	1.34							
	W	MNO	0.42	0.28							
	W	FE2O3	6.60	10.06							
	W	CR2O3	1.99	2.89							
	W	RUO2	0.02	0.03							
301					-0.	15.13			6.	2.81	6
	A	NA2O	27.65	16.05			NAOH	3.0			
	A	B2O3	5.53	3.61			B2O3	.50			
	A	AL2O3	22.12	21.12			ALPO4	4.0			
	A	P2O5	33.18	44.10			NAH2PO2-H2O	2.0			
	W	NIO	1.99	1.39							
	W	MNO	0.44	0.29							
	W	FE2O3	6.97	10.42							
	W	CR2O3	2.10	2.99							
	W	RUO2	0.02	0.03							

WASTE STUDIES---GRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
302					1075.	13.48			5.	2.84	6
	A	NA2O	29.87	17.16			NAOH	3.0			
	A	AL2O3	24.90	23.52			ALPO4	4.0			
	A	P2O5	34.85	45.84			NAAlO2	1.0			
	W	NiO	1.79	1.24			NAH2PO2-H2O	2.0			
	W	MNO	0.40	0.26			H3PO4	1.0			
	W	FE2O3	6.27	9.28							
	W	CR2O3	1.89	2.67							
	W	RUO2	0.02	0.02							
303					1075.	14.74			-0.	2.91	6
	A	NA2O	17.56	9.38			NAAlO2	1.0			
	A	AL2O3	29.27	25.73			ALPO4	4.0			
	A	P2O5	40.97	50.15			NAH2PO2-H2O	2.0			
	W	NiO	2.11	1.36			H3PO4	1.0			
	W	MNO	0.47	0.29							
	W	FE2O3	7.38	10.16							
	W	CR2O3	2.22	2.92							
	W	RUO2	0.02	0.03							
304					1075.	12.87			5.	2.88	6
	A	NA2O	28.46	16.39			NAOH	3.0			
	A	AL2O3	28.46	26.96			ALPO4	5.0			
	A	P2O5	33.20	43.79			NAAlO2	1.0			
	W	NiO	1.71	1.19			NAH2PO2-H2O	2.0			
	W	MNO	0.38	0.25							
	W	FE2O3	5.98	8.87							
	W	CR2O3	1.80	2.55							
	W	RUO2	0.02	0.02							
305					1075.	13.10			5.	2.82	6
	A	NA2O	33.20	19.46			NAOH	1.0			
	A	AL2O3	23.71	22.87			ALPO4	4.0			
	A	P2O5	33.20	44.57			NAAlO2	1.0			
	W	NiO	1.71	1.21			NAH2PO2-H2O	2.0			
	W	MNO	0.38	0.25			NA3PO4	1.0			
	W	FE2O3	5.98	9.03							
	W	CR2O3	1.80	2.59							
	W	RUO2	0.02	0.02							
306					-0.	37.87			6.	2.98	6
	A	NA2O	21.97	12.86			NA2S1O3-9H2O	0.80			
	A	SiO2	21.97	12.47			H3PO3	2.0			
	A	P2O5	27.46	36.81							
	W	NiO	4.94	3.49							
	W	MNO	1.10	0.74							
	W	FE2O3	17.30	26.09							
	W	CR2O3	5.22	7.49							
	W	RUO2	0.05	0.07							
307					-0.	50.71			6.	3.31	6
	A	P2O5	48.97	49.29			H3PO3	2.0			
	W	NiO	8.81	4.67							
	W	MNO	1.96	0.99							
	W	FE2O3	30.85	34.93							
	W	CR2O3	9.30	10.03							
	W	RUO2	0.10	0.09							
308					-0.	34.42			6.	4.23	6
	A	NA2O	20.93	9.06			NAH2PO2-H2O	1.2			
	A	PBO	22.96	35.78			PBO	0.68			
	A	P2O5	20.93	20.74							
	W	NiO	6.08	3.17							
	W	MNO	1.35	0.67							
	W	FE2O3	21.27	23.71							
	W	CR2O3	6.41	6.81							
	W	RUO2	0.07	0.06							
309					1075.	29.85			3.	2.58	6
	A	NA2O	19.83	12.67			NAH2PO2-H2O	2.0			
	A	B2O3	39.67	28.47			B2O3	2.0			
	A	P2O5	19.83	29.01							
	W	NiO	3.57	2.75							
	W	MNO	0.79	0.58							
	W	FE2O3	12.50	20.56							
	W	CR2O3	3.77	5.90							
	W	RUO2	0.04	0.05							
310					1050.	23.82			1.	2.51	6
	A	NA2O	42.60	30.32			NAOH	4.0			
	A	B2O3	28.40	22.71			B2O3	2.0			
	A	P2O5	14.20	23.15			NAH2PO2-H2O	2.0			
	W	NiO	2.56	2.19							
	W	MNO	0.57	0.46							
	W	FE2O3	8.95	16.41							
	W	CR2O3	2.70	4.71							
	W	RUO2	0.03	0.04							
311					1050.	20.72			3.	3.40	6
	A	NA2O	33.10	17.59			NAOH	2.0			
	A	B2O3	16.55	9.88			B2O3	1.0			
	A	PBO	16.55	31.67			PBO	1.0			
	A	P2O5	16.55	20.14			NAH2PO2-H2O	2.0			
	W	NiO	2.98	1.91							
	W	MNO	0.66	0.40							
	W	FE2O3	10.43	14.27							
	W	CR2O3	3.14	4.10							
	W	RUO2	0.03	0.04							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
312	A	NA2O	33.03	20.63	1050.	32.41	NAH2PO2-H2O NA2B4O7-10H2O	2.0 .50	4.	2.72	6
	A	B2O3	22.72	15.45							
	A	P2O5	22.02	31.50							
	W	NiO	3.96	2.98							
	W	MNO	0.88	0.63							
	W	FE2O3	13.87	22.33							
	W	CR2O3	4.18	6.41							
	W	RUO2	0.04	0.06							
313	A	NA2O	31.30	18.36	1000.	28.84	NAH2PO2-H2O NA2B4O7-10H2O P80	2.0 .50 .25	5.	2.93	6
	A	B2O3	20.87	13.75							
	A	P80	5.22	11.02							
	A	P2O5	20.87	28.03							
	W	NiO	3.76	2.66							
	W	MNO	0.83	0.56							
	W	FE2O3	13.15	19.87							
	W	CR2O3	3.96	5.70							
	W	RUO2	0.04	0.05							
314	A	NA2O	27.07	16.24	1075.	25.51	NAH2PO2-H2O NA2B4O7-10H2O ALPO4	2.0 .50 1.0	4.	2.75	6
	A	B2O3	18.04	12.16							
	A	AL2O3	9.02	8.90							
	A	P2O5	27.07	37.19							
	W	NiO	3.25	2.35							
	W	MNO	0.72	0.50							
	W	FE2O3	11.37	17.57							
	W	CR2O3	3.43	5.04							
	W	RUO2	0.04	0.05							
315	A	NA2O	35.69	19.60	1125.	35.52	NAH2PO2-H2O	2.6	3.	2.93	6
	A	P2O5	35.69	44.88							
	W	NiO	4.94	3.27							
	W	MNO	1.10	0.69							
	W	FE2O3	17.30	24.47							
	W	CR2O3	5.22	7.03							
	W	RUO2	0.05	0.06							
316	A	NA2O	14.20	8.45	1150.	19.92	NA2B4O7-10H2O ALPO4 H3PO3	1.0 2.0 2.0	3.	2.67	6
	A	B2O3	28.40	19.00							
	A	AL2O3	14.20	13.91							
	A	P2O5	28.40	38.72							
	W	NiO	2.56	1.83							
	W	MNO	0.57	0.39							
	W	FE2O3	8.95	13.72							
	W	CR2O3	2.70	3.94							
	W	RUO2	0.03	0.04							
317	A	NA2O	12.43	8.88	1100.	20.92	NAH2PO2-H2O B2O3	2.0 5.0	3.	2.31	6
	A	B2O3	62.17	49.87							
	A	P2O5	12.43	20.33							
	W	NiO	2.24	1.93							
	W	MNO	0.50	0.41							
	W	FE2O3	7.83	14.41							
	W	CR2O3	2.36	4.14							
	W	RUO2	0.02	0.04							
318	A	NA2O	24.74	12.60	1150.	29.69	NAH2PO2-H2O H3PO3	2.0 2.0	3.	2.83	6
	A	P2O5	49.48	57.71							
	W	NiO	4.45	2.73							
	W	MNO	0.99	0.58							
	W	FE2O3	15.59	20.45							
	W	CR2O3	4.70	5.87							
	W	RUO2	0.05	0.05							
319	A	NA2O	19.83	9.78	-0.	23.04	NAH2PO2-H2O H3PO3	2.0 4.0	6.	2.72	6
	A	P2O5	59.50	67.18							
	W	NiO	3.57	2.12							
	W	MNO	0.79	0.45							
	W	FE2O3	12.50	15.87							
	W	CR2O3	3.77	4.56							
	W	RUO2	0.04	0.04							
320	A	NA2O	41.38	28.31	1050.	26.68	NAOH B2O3 NAH2PO2-H2O	3.0 1.5 2.0	3.	2.58	6
	A	B2O3	24.83	19.08							
	A	P2O5	16.55	25.93							
	W	NiO	2.98	2.46							
	W	MNO	0.66	0.52							
	W	FE2O3	10.43	18.38							
	W	CR2O3	3.14	5.28							
	W	RUO2	0.03	0.05							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
321					-0.	26.90			6.	2.91	6
	A	NA20	22.72	11.42			NAH2P02-H20	2.0			
	A	AL203	11.01	9.39			ALP04	1.0			
	A	P205	44.03	52.29			H3P04	1.0			
	W	NiO	3.96	2.48							
	W	MNO	0.88	0.52							
	W	FE203	13.87	18.53							
	W	CR203	4.18	5.32							
	W	RU02	0.04	0.05							
322					1100.	30.95			3.	3.01	6
	A	NA20	24.74	13.13			NAH2P02-H20	2.0			
	A	AL203	12.37	10.80			ALP04	1.0			
	A	P205	37.11	45.12							
	W	NiO	4.45	2.85							
	W	MNO	0.99	0.60							
	W	FE203	15.59	21.32							
	W	CR203	4.70	6.12							
	W	RU02	0.05	0.06							
323					1150.	25.45			5.	2.87	6
	A	NA20	29.75	16.20			NAH2P02-H20	2.0			
	A	AL203	9.92	8.88			ALP04	1.0			
	A	P205	39.67	49.47			NAH2P04-H20	1.0			
	W	NiO	3.57	2.34							
	W	MNO	0.79	0.49							
	W	FE203	12.50	17.53							
	W	CR203	3.77	5.03							
	W	RU02	0.04	0.05							
324					1150.	27.05			3.	2.98	6
	A	NA20	21.78	11.48			NAH2P02-H20	2.0			
	A	AL203	16.33	14.16			ALP04	1.5			
	A	P205	39.20	47.32							
	W	NiO	3.92	2.49							
	W	MNO	0.87	0.53							
	W	FE203	13.72	18.63							
	W	CR203	4.14	5.35							
	W	RU02	0.04	0.05							
325					-0.	24.59			6.	2.98	6
	A	NA20	19.83	10.44			NAH2P02-H20	2.0			
	A	AL203	19.83	17.17			ALP04	2.0			
	A	P205	39.67	47.80							
	W	NiO	3.57	2.26							
	W	MNO	0.79	0.48							
	W	FE203	12.50	16.94							
	W	CR203	3.77	4.86							
	W	RU02	0.04	0.04							
326					1100.	34.94			3.	3.02	6
	A	NA20	27.84	14.83			NAH2P02-H20	2.0			
	A	AL203	6.96	6.10			ALP04	1.50			
	A	P205	36.19	44.14							
	W	NiO	5.01	3.22							
	W	MNO	1.11	0.68							
	W	FE203	17.54	24.07							
	W	CR203	5.29	6.91							
	W	RU02	0.06	0.06							
327					-0.	20.40			6.	2.96	6
	A	NA20	16.55	8.66			NAH2P02-H20	2.0			
	A	AL203	24.83	21.37			ALP04	3.0			
	A	P205	41.38	49.57							
	W	NiO	2.98	1.88							
	W	MNO	0.66	0.40							
	W	FE203	10.43	14.05							
	W	CR203	3.14	4.03							
	W	RU02	0.03	0.04							
328					1100.	32.32			3.	2.87	6
	A	NA20	37.11	20.57			NAH2P02-H20	2.0			
	A	P205	37.11	47.11			NAH2P04-H20	1.0			
	W	NiO	4.45	2.98							
	W	MNO	0.99	0.63							
	W	FE203	15.59	22.26							
	W	CR203	4.70	6.39							
	W	RU02	0.05	0.06							
329					1100.	26.37			3.	2.75	6
	A	NA20	39.67	22.38			NAH2P02-H20	2.0			
	A	P205	39.67	51.25			NAH2P04-H20	2.0			
	W	NiO	3.57	2.43							
	W	MNO	0.79	0.51							
	W	FE203	12.50	18.16							
	W	CR203	3.77	5.21							
	W	RU02	0.04	0.05							
330					1000.	32.69			3.	2.78	6
	A	NA20	44.03	27.75			NAOH	2.0			
	A	B203	11.01	7.79			B203	1.50			
	A	P205	22.02	31.77			NAH2P02-H20	2.0			
	W	NiO	3.96	3.01							
	W	MNO	0.88	0.64							
	W	FE203	13.87	22.52							
	W	CR203	4.18	6.46							
	W	RU02	0.04	0.06							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
331					1000.	33.26			3.	2.84	6
	A	NA2O	40.55	23.99			NAOH	1.0			
	A	B2O3	5.96	3.96			B2O3	.25			
	A	P2O5	28.63	38.79			NAH2PO2-H2O	2.0			
	W	NiO	4.29	3.06			NAH2PO4-H2O	.32			
	W	MNO	0.95	0.65							
	W	FE2O3	15.03	22.91							
	W	CR2O3	4.53	6.58							
	W	RUO2	0.05	0.06							
332					1100.	21.10			3.	2.49	6
	A	NA2O	53.94	40.29			NAOH	7.1			
	A	B2O3	21.58	18.11			B2O3	1.8			
	A	P2O5	11.99	20.51			NAH2PO2-H2O	2.0			
	W	NiO	2.16	1.94							
	W	MNO	0.48	0.41							
	W	FE2O3	7.55	14.53							
	W	CR2O3	2.28	4.17							
	W	RUO2	0.02	0.04							
333					1000.	23.95			3.	2.65	6
	A	NA2O	45.59	28.45			NAOH	2.0			
	A	B2O3	8.14	5.71			B2O3	.50			
	A	P2O5	29.31	41.89			NAH2PO2-H2O	2.0			
	W	NiO	2.93	2.20			NAH2PO4-H2O	1.6			
	W	MNO	0.65	0.47							
	W	FE2O3	10.26	16.50							
	W	CR2O3	3.09	4.74							
	W	RUO2	0.03	0.04							
334					1100.	15.27			1.	2.82	6
	A	NA2O	31.94	19.44			NAOH	.40			
	A	B2O3	6.92	4.73			NA2B4O7-10H2O	.33			
	A	AL2O3	23.42	23.45			AL (NO3)3-9H2O	4.3			
	A	P2O5	26.62	37.10			NAH2PO2-H2O	2.0			
	W	NiO	1.92	1.41			NAH2PO4-H2O	3.0			
	W	MNO	0.43	0.30							
	W	FE2O3	6.71	10.52							
	W	CR2O3	2.02	3.02							
	W	RUO2	0.02	0.03							
335					1150.	19.41			1.	2.99	6
	A	NA2O	27.06	16.47			NAOH	.40			
	A	B2O3	8.79	6.02			NA2B4O7-10H2O	.33			
	A	AL2O3	29.76	29.81			AL (NO3)3-9H2O	4.3			
	A	P2O5	20.29	28.30			NAH2PO2-H2O	2.0			
	W	NiO	2.44	1.79			NAH2PO4-H2O	1.0			
	W	MNO	0.54	0.38							
	W	FE2O3	8.52	13.37							
	W	CR2O3	2.57	3.84							
	W	RUO2	0.03	0.04							
336					-0.	23.67			6.	3.41	6
	A	NA2O	24.34	13.06			NAH2PO2-H2O	2.0			
	A	B2O3	9.36	5.64			NA2B4O7-10H2O	.25			
	A	AL2O3	18.72	16.53			AL (NO3)3-9H2O	2.0			
	A	PBO	9.36	18.09			PBO	.50			
	A	P2O5	18.72	23.01							
	W	NiO	3.37	2.18							
	W	MNO	0.75	0.46							
	W	FE2O3	11.79	16.31							
	W	CR2O3	3.56	4.68							
	W	RUO2	0.04	0.04							
337					1150.	14.42			4.	2.88	6
	A	NA2O	31.44	18.36			NAH2PO2-H2O	2.0			
	A	AL2O3	26.20	25.17			AL (NO3)3-9H2O	5.0			
	A	P2O5	31.44	42.05			NAH2PO4-H2O	4.0			
	W	NiO	1.89	1.33							
	W	MNO	0.42	0.28							
	W	FE2O3	6.60	9.93							
	W	CR2O3	1.99	2.85							
	W	RUO2	0.02	0.03							
338					1150.	17.34			4.	2.90	6
	A	NA2O	28.08	16.93			NAH2PO2-H2O	2.0			
	A	B2O3	7.93	5.38			NA2B4O7-10H2O	.33			
	A	AL2O3	26.86	26.64			AL (NO3)3-9H2O	4.3			
	A	P2O5	24.41	33.71			NAH2PO4-H2O	2.0			
	W	NiO	2.20	1.60							
	W	MNO	0.49	0.34							
	W	FE2O3	7.69	11.95							
	W	CR2O3	2.32	3.43							
	W	RUO2	0.02	0.03							
339					1050.	16.48			1.	2.84	6
	A	NA2O	31.21	18.88			NAOH	.37			
	A	B2O3	7.05	4.79			NA2B4O7-10H2O	.30			
	A	AL2O3	23.12	23.01			AL (NO3)3-9H2O	4.0			
	A	P2O5	26.58	36.84			NAH2PO2-H2O	2.0			
	W	NiO	2.08	1.52			NAH2PO4-H2O	2.5			
	W	MNO	0.46	0.32							
	W	FE2O3	7.28	11.35							
	W	CR2O3	2.20	3.26							
	W	RUO2	0.02	0.03							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
340					-0.	29.72			6.	3.08	6
	A	NA2O	28.01	16.40			NAOH	.30			
	A	B2O3	6.46	4.25			NA2B4O7-10H2O	.15			
	A	AL2O3	21.54	20.75			AL (NO3) 3-9H2O	2.0			
	A	P2O5	21.54	28.89			NAH2PO2-H2O	2.0			
	W	NiO	3.88	2.74							
	W	MNO	0.86	0.58							
	W	FE2O3	13.57	20.47							
	W	CR2O3	4.09	5.88							
	W	RUO2	0.04	0.05							
341					950.	26.68			3.	2.58	6
	A	NA2O	41.38	28.31			NAOH	1.5			
	A	B2O3	24.83	19.08			NA2B4O7-10H2O	.75			
	A	P2O5	16.55	25.93			NAH2PO2-H2O	2.0			
	W	NiO	2.98	2.46							
	W	MNO	0.66	0.52							
	W	FE2O3	10.43	18.38							
	W	CR2O3	3.14	5.28							
	W	RUO2	0.03	0.05							
342					1150.	20.20			1.	2.89	6
	A	NA2O	31.42	18.86			NAOH	.46			
	A	B2O3	6.57	4.43			NA2B4O7-10H2O	.23			
	A	AL2O3	21.42	21.16			AL (NO3) 3-9H2O	3.0			
	A	P2O5	25.71	35.35			NAH2PO2-H2O	2.0			
	W	NiO	2.57	1.86			NAH2PO4-H2O	1.5			
	W	MNO	0.57	0.39							
	W	FE2O3	9.00	13.92							
	W	CR2O3	2.71	4.00							
	W	RUO2	0.03	0.04							
343					1150.	25.03			5.	2.85	6
	A	NA2O	33.10	21.24			NAOH	1.0			
	A	B2O3	16.55	11.93			NA2B4O7-10H2O	.50			
	A	AL2O3	16.55	17.47			AL (NO3) 3-9H2O	2.0			
	A	P2O5	16.55	24.32			NAH2PO2-H2O	2.0			
	W	NiO	2.98	2.30							
	W	MNO	0.66	0.49							
	W	FE2O3	10.43	17.24							
	W	CR2O3	3.14	4.95							
	W	RUO2	0.03	0.05							
344					1150.	25.11			3.	2.99	6
	A	NA2O	26.45	15.99			NAH2PO2-H2O	2.0			
	A	B2O3	17.63	11.97			NA2B4O7-10H2O	.50			
	A	AL2O3	17.63	17.53			AL (NO3) 3-9H2O	2.0			
	A	PBO	2.29	4.99			PBO	.13			
	A	P2O5	17.63	24.41							
	W	NiO	3.17	2.31							
	W	MNO	0.71	0.49							
	W	FE2O3	11.11	17.30							
	W	CR2O3	3.35	4.97							
	W	RUO2	0.04	0.05							
345					1100.	25.58			3.	2.54	6
	A	NA2O	23.96	15.20			NAH2PO2-H2O	2.8			
	A	B2O3	34.23	24.40			B2O3	2.0			
	A	P2O5	23.96	34.81							
	W	NiO	3.08	2.36							
	W	MNO	0.68	0.50							
	W	FE2O3	10.78	17.63							
	W	CR2O3	3.25	5.06							
	W	RUO2	0.03	0.05							
346					1100.	25.50			1.	2.67	-0
	A	NA2O	24.55	15.15			NAH2PO2-H2O	2.8			
	A	B2O3	26.31	18.24			B2O3	1.5			
	A	AL2O3	6.31	6.41			AL (NO3) 3-9H2O	.72			
	A	P2O5	24.55	34.70							
	W	NiO	3.16	2.35							
	W	MNO	0.70	0.50							
	W	FE2O3	11.05	17.57							
	W	CR2O3	3.33	5.04							
	W	RUO2	0.04	0.05							
347					1100.	25.42			1.	2.80	-0
	A	NA2O	25.17	15.10			NAH2PO2-H2O	2.8			
	A	B2O3	17.98	12.12			B2O3	1.0			
	A	AL2O3	12.94	12.78			AL (NO3) 3-9H2O	1.4			
	A	P2O5	25.17	34.59							
	W	NiO	3.24	2.34							
	W	MNO	0.72	0.49							
	W	FE2O3	11.33	17.51							
	W	CR2O3	3.42	5.03							
	W	RUO2	0.04	0.05							
348					-0.	25.21			6.	2.95	-0
	A	NA2O	25.68	14.98			NAH2PO2-H2O	2.8			
	A	B2O3	9.35	6.13			B2O3	.51			
	A	AL2O3	20.18	19.36			AL (NO3) 3-9H2O	2.2			
	A	P2O5	25.68	34.31							
	W	NiO	3.30	2.32							
	W	MNO	0.73	0.49							
	W	FE2O3	11.56	17.37							
	W	CR2O3	3.48	4.99							
	W	RUO2	0.04	0.05							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CUNC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
349					1100.	25.52			3.	2.80	-0
	A	NA2O	21.85	13.00			NAH2PO2-H2O	2.4			
	A	B2O3	27.33	13.39			B2O3	1.1			
	A	AL2O3	13.66	13.36			AL (NO3)3-9H2O	1.5			
	A	P2O5	25.49	34.73			H3PO3	.40			
	W	NiO	3.28	2.55							
	W	MNO	0.73	0.50							
	W	FE2O3	11.47	17.58							
	W	CR2O3	3.46	5.05							
	W	RUO2	0.04	0.05							
350					-0.	25.14			6.	3.06	-0
	A	NA2O	12.85	7.15			NAH2PO2-H2O	1.3			
	A	B2O3	11.51	7.19			B2O3	.60			
	A	AL2O3	28.78	26.32			AL (NO3)3-9H2O	3.0			
	A	P2O5	26.86	34.20			H3PO3	1.5			
	W	NiO	3.45	2.31							
	W	MNO	0.77	0.49							
	W	FE2O3	12.09	17.32							
	W	CR2O3	3.65	4.97							
	W	RUO2	0.04	0.05							
351					1100.	25.14			3.	2.56	6
	A	NA2O	31.45	20.27			NAOH	1.0			
	A	B2O3	28.14	23.38			B2O3	1.7			
	A	P2O5	23.17	34.21			NAH2PO2-H2O	2.8			
	W	NiO	2.98	2.31							
	W	MNO	0.66	0.49							
	W	FE2O3	10.43	17.32							
	W	CR2O3	3.14	4.97							
	W	RUO2	0.03	0.05							
352					-0.	25.20			6.	2.86	6
	A	NA2O	47.93	29.95			NAOH	2.8			
	A	AL2O3	10.27	10.56			AL (NO3)3-9H2O	1.2			
	A	P2O5	23.96	34.29			NAH2PO2-H2O	2.8			
	W	NiO	3.08	2.32							
	W	MNO	0.68	0.49							
	W	FE2O3	10.78	17.36							
	W	CR2O3	3.25	4.98							
	W	RUO2	0.03	0.05							
353					1050.	25.40			3.	2.83	6
	A	NA2O	40.20	24.79			NAOH	1.8			
	A	B2O3	6.64	4.60			B2O3	.38			
	A	AL2O3	10.49	10.64			AL (NO3)3-9H2O	1.2			
	A	P2O5	24.47	34.56			NAH2PO2-H2O	2.8			
	W	NiO	3.15	2.34							
	W	MNO	0.70	0.49							
	W	FE2O3	11.01	17.50							
	W	CR2O3	3.32	5.02							
	W	RUO2	0.03	0.05							
354					-0.	25.23			6.	2.76	6
	A	B2O3	37.23	24.06			B2O3	2.0			
	A	AL2O3	17.31	16.38			AL (NO3)3-9H2O	1.9			
	A	P2O5	26.06	34.33			H3PO3	2.8			
	W	NiO	3.35	2.32							
	W	MNO	0.74	0.49							
	W	FE2O3	11.73	17.38							
	W	CR2O3	3.54	4.99							
	W	RUO2	0.04	0.05							
355					1150.	25.43			5.	2.74	6
	A	NA2O	16.30	9.71			NAH2PO2-H2O	1.8			
	A	B2O3	27.16	18.19			B2O3	1.5			
	A	AL2O3	12.31	12.07			AL (NO3)3-9H2O	1.4			
	A	P2O5	25.35	34.60			H3PO3	1.0			
	W	NiO	3.26	2.34							
	W	MNO	0.72	0.49							
	W	FE2O3	11.41	17.52							
	W	CR2O3	3.44	5.03							
	W	RUO2	0.04	0.05							
356					1100.	25.20			3.	2.58	6
	A	NA2O	18.83	11.76			NAH2PO2-H2O	2.2			
	A	B2O3	35.95	25.23			B2O3	2.1			
	A	AL2O3	3.42	3.52			AL (NO3)3-9H2O	.40			
	A	P2O5	23.96	34.29			H3PO3	.60			
	W	NiO	3.38	2.32							
	W	MNO	0.68	0.49							
	W	FE2O3	10.78	17.36							
	W	CR2O3	3.25	4.98							
	W	RUO2	0.03	0.05							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WD	ADDITIVES	CONC. M/L	APP. PORE FREE D.	WASTE TYPE	
357					800.	27.69			3.	2.58	2
	A	LI2O	18.86	6.22			LI OH-H2O	2.4			
	A	NA2O	22.71	15.05			NAOH	2.7			
	A	AL2O3	5.97	6.72			AL (NO3)3-9H2O	.75			
	A	P2O5	28.30	44.32			H3PO4	3.6			
	W	NA2O	7.07	4.84	19.89						
	W	BAO	0.26	0.44							
	W	NIO	0.47	0.39							
	W	AL2O3	1.18	1.33	8.05						
	W	FE2O3	2.36	4.16							
	W	CR2O3	0.47	0.79							
	W	ZR02	0.99	1.35							
	W	RU02	1.32	1.94							
	W	MOO3	1.18	1.87							
	W	P2O5	0.12	0.18	44.50						
	W	SO3	7.07	6.25							
	W	SiO2	0.47	0.31							
	W	F	0.24	0.05							
	W	RB2O	0.17	0.34							
	W	CS2O	0.17	0.51							
	W	SRO	0.26	0.30							
	W	Y2O3	1.06	2.64							
358					900.	49.08			3.	2.78	2
	A	LI2O	21.24	6.89			LI OH-H2O	1.5			
	A	CAO	5.66	3.45			CA (NO3)2-4H2O	.20			
	A	AL2O3	7.08	7.84			AL (NO3)3-9H2O	.50			
	A	P2O5	21.24	32.74			H3PO4	1.5			
	W	NA2O	12.74	8.58							
	W	BAO	0.47	0.78							
	W	NIO	0.85	0.69							
	W	AL2O3	2.12	2.35	10.19						
	W	FE2O3	4.25	7.37							
	W	CR2O3	0.85	1.40							
	W	ZR02	1.78	2.39							
	W	RU02	2.38	3.44							
	W	MOO3	2.12	3.32							
	W	P2O5	0.21	0.33	33.06						
	W	SO3	12.74	11.08							
	W	SiO2	0.85	0.55							
	W	F	0.42	0.09							
	W	RB2O	0.30	0.60							
	W	CS2O	0.30	0.91							
	W	SRO	0.47	0.53							
	W	Y2O3	1.91	4.69							
359					-0.	56.14			6.	2.86	2
	A	LI2O	18.38	5.99			LI OH-H2O	1.1			
	A	CAO	6.45	3.94			CA (NO3)2-4H2O	.20			
	A	AL2O3	8.76	8.96			AL (NO3)3-9H2O	.50			
	A	P2O5	16.12	24.96			H3PO4	1.0			
	W	NA2O	14.51	9.81							
	W	BAO	0.53	0.89							
	W	NIO	0.97	0.79							
	W	AL2O3	2.42	2.69	11.65						
	W	FE2O3	4.84	8.42							
	W	CR2O3	0.97	1.60							
	W	ZR02	2.03	2.73							
	W	RU02	2.71	3.93							
	W	MOO3	2.42	3.80							
	W	P2O5	0.24	0.37	25.34						
	W	SO3	14.51	12.67							
	W	SiO2	0.97	0.63							
	W	F	0.48	0.10							
	W	RB2O	0.34	0.69							
	W	CS2O	0.34	1.04							
	W	SRO	0.53	0.60							
	W	Y2O3	2.18	5.36							
360					900.	45.14			5.	2.78	2
	A	LI2O	11.17	3.38			LI OH-H2O	.80			
	A	NA2O	12.57	7.89			NAOH	.90			
	A	AL2O3	6.98	7.21			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.40	2.26			FE (NO3)3-9H2O	.10			
	A	P2O5	23.74	34.12			H3PO4	1.7			
	W	NA2O	12.57	7.89	15.78						
	W	BAO	0.46	0.72							
	W	NIO	0.84	0.63							
	W	AL2O3	2.09	2.16	9.37						
	W	FE2O3	4.19	6.77	9.03						
	W	CR2O3	0.84	1.29							
	W	ZR02	1.76	2.20							
	W	RU02	2.35	3.16							
	W	MOO3	2.09	3.05							
	W	P2O5	0.21	0.30	34.42						
	W	SO3	12.57	10.19							
	W	SiO2	0.84	0.51							
	W	F	0.42	0.08							
	W	RB2O	0.29	0.56							
	W	CS2O	0.29	0.84							
	W	SRO	0.46	0.48							
	W	Y2O3	1.88	4.31							

WASTE STUDIES---ORNL

NCTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
361					900.	46.19			5.	2.75	2
	A	LI2O	11.33	3.46			LI OH-H2O	.80			
	A	NA2O	12.74	8.07			NA OH	.90			
	A	AL2O3	7.08	7.38			AL (NO3)3-9H2O	.50			
	A	P2O5	24.37	34.91			H3PO4	1.7			
	W	NA2O	12.74	25.49	8.07	16.14					
	W	BAO	0.47	0.73							
	W	NI0	0.85	0.65							
	W	AL2O3	2.12	9.20	2.21	9.59					
	W	FE2O3	4.25	6.93							
	W	CR2O3	0.85	1.32							
	W	ZR02	1.78	2.25							
	W	RU02	2.38	3.23							
	W	MO03	2.12	3.12							
	W	P2O5	0.21	24.28	0.31	35.22					
	W	SO3	12.74	10.43							
	W	SI02	0.85	0.52							
	W	F	0.42	0.08							
	W	RB2O	0.30	0.57							
	W	CS2O	0.30	0.86							
	W	SRO	0.47	0.49							
	W	Y2O3	1.91	4.41							
362					850.	41.72			5.	2.74	2
	A	LI2O	11.59	3.51			LI OH-H2O	.90			
	A	NA2O	14.17	8.91			NA OH	1.1			
	A	AL2O3	6.44	6.66			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.29	2.09			FE (NO3)3-9H2O	.10			
	A	P2O5	25.77	37.10			H3PO4	2.0			
	W	NA2O	11.59	25.77	7.29	16.20					
	W	BAO	0.43	0.66							
	W	NI0	0.77	0.59							
	W	AL2O3	1.93	8.37	2.00	8.66					
	W	FE2O3	3.86	5.15	6.26	8.35					
	W	CR2O3	0.77	1.19							
	W	ZR02	1.62	2.03							
	W	RU02	2.16	2.92							
	W	MO03	1.93	2.82							
	W	P2O5	0.19	25.96	0.28	37.38					
	W	SO3	11.59	9.42							
	W	SI02	0.77	0.47							
	W	F	0.39	0.07							
	W	RB2O	0.27	0.51							
	W	CS2O	0.27	0.77							
	W	SRO	0.43	0.45							
	W	Y2O3	1.74	3.98							
363					850.	42.61			5.	2.71	2
	A	LI2O	11.75	3.59			LI OH-H2O	.90			
	A	NA2O	14.36	9.10			NA OH	1.1			
	A	AL2O3	6.53	6.80			AL (NO3)3-9H2O	.50			
	A	P2O5	26.10	37.89			H3PO4	2.0			
	W	NA2O	11.75	26.10	7.45	16.55					
	W	BAO	0.43	0.68							
	W	NI0	0.78	0.60							
	W	AL2O3	1.96	8.48	2.04	8.85					
	W	FE2O3	3.92	6.39							
	W	CR2O3	0.78	1.22							
	W	ZR02	1.64	2.07							
	W	RU02	2.19	2.98							
	W	MO03	1.96	2.88							
	W	P2O5	0.20	26.30	0.28	38.18					
	W	SO3	11.75	9.62							
	W	SI02	0.78	0.48							
	W	F	0.39	0.08							
	W	RB2O	0.27	0.52							
	W	CS2O	0.27	0.79							
	W	SRO	0.43	0.46							
	W	Y2O3	1.76	4.07							
364					850.	37.31			5.	2.66	2
	A	LI2O	13.70	4.19			LI OH-H2O	1.2			
	A	NA2O	14.84	9.42			NA OH	1.3			
	A	AL2O3	5.71	5.96			AL (NO3)3-9H2O	.50			
	A	P2O5	29.67	43.13			H3PO4	2.5			
	W	NA2O	10.27	25.11	6.52	15.93					
	W	BAO	0.38	0.59							
	W	NI0	0.68	0.52							
	W	AL2O3	1.71	7.42	1.79	7.74					
	W	FE2O3	3.42	5.60							
	W	CR2O3	0.68	1.07							
	W	ZR02	1.44	1.81							
	W	RU02	1.92	2.61							
	W	MO03	1.71	2.52							
	W	P2O5	0.17	29.84	0.25	43.38					
	W	SO3	10.27	8.42							
	W	SI02	0.68	0.42							
	W	F	0.34	0.07							
	W	RB2O	0.24	0.46							
	W	CS2O	0.24	0.69							
	W	SRO	0.38	0.40							
	W	Y2O3	1.54	3.56							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W/O	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
365					900.	36.62			5.	2.68	2
	A	LI2O	13.54	4.11			LI OH-H2O	1.2			
	A	NA2O	14.67	9.24			NA OH	1.3			
	A	AL2O3	5.64	5.85			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.13	1.83			FE (NO3)3-9H2O	.10			
	A	P2O5	29.34	42.34			H3PO4	2.5			
	W	NA2O	10.16	24.83	15.64						
	W	BAO	0.37	0.58							
	W	NIO	0.68	0.51							
	W	AL2O3	1.69	7.33	7.60						
	W	FE2O3	3.39	4.51	7.33						
	W	CR2O3	0.68	1.05							
	W	ZRO2	1.42	1.78							
	W	RUO2	1.93	2.57							
	W	MOO3	1.69	2.48							
	W	P2O5	0.17	29.51	42.58						
	W	SO3	10.16	8.27							
	W	SI02	0.68	0.41							
	W	F	0.34	0.07							
	W	RB2O	0.24	0.45							
	W	CS2O	0.24	0.68							
	W	SRO	0.37	0.39							
	W	Y2O3	1.52	3.50							
366					800.	33.70			5.	2.64	2
	A	LI2O	14.34	4.42			LI OH-H2O	1.4			
	A	NA2O	16.39	10.47			NA OH	1.6			
	A	AL2O3	6.15	6.46			AL (NO3)3-9H2O	.60			
	A	P2O5	30.73	44.96			H3PO4	3.0			
	W	NA2O	9.22	25.61	16.36						
	W	BAO	0.34	0.53							
	W	NIO	0.61	0.47							
	W	AL2O3	1.54	7.68	8.07						
	W	FE2O3	3.07	5.06							
	W	CR2O3	0.61	0.96							
	W	ZRO2	1.29	1.64							
	W	RUO2	1.72	2.36							
	W	MOO3	1.54	2.28							
	W	P2O5	0.15	30.89	45.18						
	W	SO3	9.22	7.61							
	W	SI02	0.61	0.38							
	W	F	0.31	0.06							
	W	RB2O	0.22	0.41							
	W	CS2O	0.22	0.62							
	W	SRO	0.34	0.36							
	W	Y2O3	1.38	3.22							
367					850.	33.14			5.	2.66	2
	A	LI2O	14.20	4.34			LI OH-H2O	1.4			
	A	NA2O	16.22	10.30			NA OH	1.6			
	A	AL2O3	6.08	6.35			AL (NO3)3-9H2O	.60			
	A	FE2O3	1.01	1.66			FE (NO3)3-9H2O	.10			
	A	P2O5	30.42	44.21			H3PO4	.30			
	W	NA2O	9.13	25.35	16.09						
	W	BAO	0.33	0.53							
	W	NIO	0.61	0.47							
	W	AL2O3	1.52	7.60	7.94						
	W	FE2O3	3.04	4.06	6.63						
	W	CR2O3	0.61	0.95							
	W	ZRO2	1.28	1.61							
	W	RUO2	1.70	2.32							
	W	MOO3	1.52	2.24							
	W	P2O5	0.15	30.57	44.43						
	W	SO3	9.13	7.48							
	W	SI02	0.61	0.37							
	W	F	0.30	0.06							
	W	RB2O	0.21	0.41							
	W	CS2O	0.21	0.61							
	W	SRO	0.33	0.36							
	W	Y2O3	1.37	3.17							
368					1050.	47.07			3.	2.79	2
	A	LI2O	23.74	7.49			LI OH-H2O	1.7			
	A	AL2O3	6.98	7.52			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.40	2.35			FE (NO3)3-9H2O	.10			
	A	P2O5	23.74	35.58			H3PO4	1.7			
	W	NA2O	12.57	8.22							
	W	BAO	0.46	0.75							
	W	NIO	0.84	0.66							
	W	AL2O3	2.09	9.08	9.77						
	W	FE2O3	4.19	5.59	9.42						
	W	CR2O3	0.84	1.34							
	W	ZRO2	1.76	2.29							
	W	RUO2	2.35	3.30							
	W	MOO3	2.09	3.18							
	W	P2O5	0.21	23.95	35.89						
	W	SO3	12.57	10.62							
	W	SI02	0.84	0.53							
	W	F	0.42	0.08							
	W	RB2O	0.29	0.58							
	W	CS2O	0.29	0.87							
	W	SRO	0.46	0.50							
	W	Y2O3	1.88	4.49							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
369					1050.	48.20			3.	2.76	2
	A	LI2O	24.07	7.67			LI OH-H2O	1.7			
	A	AL2O3	7.08	7.70			AL (NO3)3-9H2O	.50			
	A	P2O5	24.07	36.43			H3PO4	1.7			
	W	NA2O	12.74	8.42							
	W	BAO	0.47	0.76							
	W	NIO	0.85	0.68							
	W	AL2O3	2.12	2.31	10.01						
	W	FE2O3	4.25	7.23							
	W	CR2O3	0.85	1.38							
	W	ZRO2	1.78	2.34							
	W	RUO2	2.38	3.38							
	W	MOO3	2.12	3.26							
	W	P2O5	0.21	0.32	36.76						
	W	SO3	12.74	10.88							
	W	SI02	0.85	0.54							
	W	F	0.42	0.09							
	W	RB2O	0.30	0.59							
	W	CS2O	0.33	0.89							
	W	SRO	0.47	0.52							
	W	Y2O3	1.91	4.60							
370					1050.	43.74			5.	2.75	2
	A	LI2O	25.77	8.19			LI OH-H2O	2.0			
	A	AL2O3	6.44	6.98			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.29	2.19			FE (NO3)3-9H2O	.10			
	A	P2O5	25.77	38.90			H3PO4	2.0			
	W	NA2O	11.59	7.64							
	W	BAO	0.43	0.69							
	W	NIO	0.77	0.61							
	W	AL2O3	1.93	2.10	9.08						
	W	FE2O3	3.86	6.56	8.75						
	W	CR2O3	0.77	1.25							
	W	ZRO2	1.62	2.13							
	W	RUO2	2.16	3.06							
	W	MOO3	1.93	2.96							
	W	P2O5	0.19	0.29	39.19						
	W	SO3	11.59	9.87							
	W	SI02	0.77	0.49							
	W	F	0.39	0.08							
	W	RB2O	0.27	0.54							
	W	CS2O	0.27	0.81							
	W	SRO	0.43	0.47							
	W	Y2O3	1.74	4.18							
371					1050.	44.72			5.	2.72	2
	A	LI2O	26.10	8.37			LI OH-H2O	2.0			
	A	AL2O3	6.53	7.14			AL (NO3)3-9H2O	.50			
	A	P2O5	26.10	39.77			H3PO4	2.0			
	W	NA2O	11.75	7.81							
	W	BAO	0.43	0.71							
	W	NIO	0.78	0.63							
	W	AL2O3	1.96	2.14	9.28						
	W	FE2O3	3.92	6.71							
	W	CR2O3	0.78	1.28							
	W	ZRO2	1.64	2.17							
	W	RUO2	2.19	3.13							
	W	MOO3	1.96	3.02							
	W	P2O5	0.20	0.30	40.07						
	W	SO3	11.75	10.09							
	W	SI02	0.78	0.51							
	W	F	0.39	0.08							
	W	RB2O	0.27	0.55							
	W	CS2O	0.27	0.83							
	W	SRO	0.43	0.48							
	W	Y2O3	1.76	4.27							
372					1050.	39.08			5.	2.66	2
	A	LI2O	29.34	9.51			LI OH-H2O	2.5			
	A	AL2O3	5.64	6.24			AL (NO3)3-9H2O	.50			
	A	P2O5	29.34	45.17			H3PO4	2.5			
	W	NA2O	10.16	6.83							
	W	BAO	0.37	0.62							
	W	NIO	0.68	0.55							
	W	AL2O3	1.69	1.87	8.11						
	W	FE2O3	3.39	5.86							
	W	CR2O3	0.68	1.12							
	W	ZRO2	1.42	1.90							
	W	RUO2	1.90	2.74							
	W	MOO3	1.69	2.64							
	W	P2O5	0.17	0.26	45.44						
	W	SO3	10.16	8.82							
	W	SI02	0.68	0.44							
	W	F	0.34	0.07							
	W	RB2O	0.24	0.48							
	W	CS2O	0.24	0.72							
	W	SRO	0.37	0.42							
	W	Y2O3	1.52	3.73							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
373					1050.	38.33			5.	2.68	2
	A	LI2O	29.01	9.33			LI OH-H2O	2.5			
	A	AL2O3	5.58	6.12			AL (NO3)3-9H2O	.50			
	A	FE2O3	1.12	1.92			FE (NO3)3-9H2O	.10			
	A	P2O5	29.01	44.31			H3PO4	2.5			
	W	NA2O	13.04	6.70							
	W	BAO	0.37	0.61							
	W	NI0	0.67	0.54							
	W	AL2O3	1.67	1.84	7.25	7.96					
	W	FE2O3	3.35	5.75	4.46	7.67					
	W	CR2O3	0.67	1.10							
	W	ZR02	1.41	1.86							
	W	RU02	1.87	2.68							
	W	MC03	1.67	2.59							
	W	P2O5	0.17	0.26	29.18	44.56					
	W	SO3	13.04	8.65							
	W	SI02	0.67	0.43							
	W	F	0.33	0.07							
	W	RB2O	0.23	0.47							
	W	CS2O	0.23	0.71							
	W	SRO	0.37	0.41							
	W	Y2O3	1.51	3.66							
374					1050.	35.63			5.	2.64	2
	A	LI2O	30.73	10.01			LI OH-H2O	3.0			
	A	AL2O3	6.15	6.83			AL (NO3)3-9H2O	.60			
	A	P2O5	30.73	47.53			H3PO4	3.0			
	W	NA2O	9.22	6.23							
	W	BAO	0.34	0.56							
	W	NI0	0.61	0.50							
	W	AL2O3	1.54	1.71	7.68	8.54					
	W	FE2O3	3.07	5.35							
	W	CR2O3	0.61	1.02							
	W	ZR02	1.29	1.73							
	W	RU02	1.72	2.50							
	W	MC03	1.54	2.41							
	W	P2O5	0.15	0.24	30.89	47.77					
	W	SO3	9.22	8.04							
	W	SI02	0.61	0.40							
	W	F	0.31	0.06							
	W	RB2O	0.22	0.44							
	W	CS2O	0.22	0.66							
	W	SRO	0.34	0.38							
	W	Y2O3	1.38	3.40							
375					1050.	35.01			5.	2.66	2
	A	LI2O	30.42	9.83			LI OH-H2O	3.0			
	A	AL2O3	6.08	6.71			AL (NO3)3-9H2O	.60			
	A	FE2O3	1.01	1.75			FE (NO3)3-9H2O	.10			
	A	P2O5	30.42	46.70			H3PO4	3.0			
	W	NA2O	9.13	6.12							
	W	BAO	0.33	0.55							
	W	NI0	0.61	0.49							
	W	AL2O3	1.52	1.68	7.60	8.39					
	W	FE2O3	3.04	5.25	4.06	7.01					
	W	CR2O3	0.61	1.00							
	W	ZR02	1.28	1.70							
	W	RU02	1.70	2.45							
	W	P003	1.52	2.37							
	W	P2O5	0.15	0.23	30.57	46.93					
	W	SO3	9.13	7.90							
	W	SI02	0.61	0.40							
	W	F	0.30	0.06							
	W	RB2O	0.21	0.43							
	W	CS2O	0.21	0.65							
	W	SRO	0.33	0.38							
	W	Y2O3	1.37	3.34							
376					850.	23.19			3.	2.55	2
	A	LI2O	20.89	6.95			LI OH-H2O	3.1			
	A	NA2O	22.19	15.31			NAOH	3.5			
	A	AL2O3	6.27	7.11			AL (NO3)3-9H2O	.96			
	A	P2O5	30.02	47.44			H3PO4	4.6			
	W	NA2O	5.87	4.05	28.06	19.36					
	W	BAO	0.22	0.37							
	W	NI0	0.39	0.33							
	W	AL2O3	0.98	1.11	7.24	8.22					
	W	FE2O3	1.96	3.48							
	W	CR2O3	0.39	0.66							
	W	ZR02	0.82	1.13							
	W	RU02	1.10	1.62							
	W	MC03	0.98	1.57							
	W	P2O5	0.10	0.15	30.12	47.59					
	W	SO3	5.87	5.24							
	W	SI02	0.39	0.26							
	W	F	0.20	0.04							
	W	RB2O	0.14	0.29							
	W	CS2O	0.14	0.43							
	W	SRO	0.22	0.25							
	W	Y2O3	0.88	2.22							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
377					850.	18.32			3.	2.52	2
	A	Li2O	21.58	7.20			LiOH-H2O	4.2			
	A	Na2O	23.64	16.36			NaOH	4.7			
	A	Al2O3	6.68	7.61			Al(NO3)3-9H2O	1.3			
	A	P2O5	31.86	50.51			H3PO4	6.2			
	W	Na2O	4.62	28.26	19.56						
	W	BAO	0.17	0.29							
	W	NiO	0.31	0.26							
	W	Al2O3	0.77	7.45	8.48						
	W	Fe2O3	1.54	2.75							
	W	CR2O3	0.31	0.52							
	W	ZrO2	0.65	0.89							
	W	RUO2	0.86	1.28							
	W	MC03	0.77	1.24							
	W	P2O5	0.08	31.93	50.63						
	W	S03	4.62	4.14							
	W	SiO2	0.31	0.21							
	W	F	0.15	0.03							
	W	RB2O	0.11	0.23							
	W	CS2O	0.11	0.34							
	W	SRO	0.17	0.20							
	W	Y2O3	0.69	1.75							
378					750.	23.54			3.	2.54	2
	A	Li2O	21.16	7.05			LiOH-H2O	3.1			
	A	Na2O	22.48	15.54			NaOH	3.5			
	A	Al2O3	5.03	5.71			Al(NO3)3-9H2O	1.75			
	A	P2O5	30.42	48.15			H3PO4	4.6			
	W	Na2O	5.95	28.44	19.65						
	W	BAO	0.22	0.37							
	W	NiO	0.40	0.33							
	W	Al2O3	0.99	6.02	6.84						
	W	Fe2O3	1.98	3.53							
	W	CR2O3	0.40	0.67							
	W	ZrO2	0.83	1.14							
	W	RUO2	1.11	1.65							
	W	MC03	0.99	1.59							
	W	P2O5	0.10	30.52	48.31						
	W	S03	5.95	5.31							
	W	SiO2	0.40	0.27							
	W	F	0.20	0.04							
	W	RB2O	0.14	0.29							
	W	CS2O	0.14	0.44							
	W	SRO	0.22	0.25							
	W	Y2O3	0.89	2.25							
379					750.	18.92			3.	2.49	2
	A	Li2O	22.20	7.44			LiOH-H2O	4.2			
	A	Na2O	24.31	16.90			NaOH	4.7			
	A	Al2O3	4.02	4.59			Al(NO3)3-9H2O	1.75			
	A	P2O5	32.77	52.16			H3PO4	6.2			
	W	Na2O	4.76	29.07	20.20						
	W	BAO	0.17	0.30							
	W	NiO	0.32	0.27							
	W	Al2O3	0.79	4.81	5.50						
	W	Fe2O3	1.59	2.84							
	W	CR2O3	0.32	0.54							
	W	ZrO2	0.67	0.92							
	W	RUO2	0.89	1.33							
	W	MC03	0.79	1.28							
	W	P2O5	0.08	32.85	52.28						
	W	S03	4.76	4.27							
	W	SiO2	0.32	0.21							
	W	F	0.16	0.03							
	W	RB2O	0.11	0.23							
	W	CS2O	0.11	0.35							
	W	SRO	0.17	0.20							
	W	Y2O3	0.71	1.81							
380					1050.	44.53			5.	2.74	2
	A	Na2O	24.07	14.70			NaOH	1.7			
	A	Al2O3	7.06	7.11			Al(NO3)3-9H2O	1.50			
	A	P2O5	24.07	35.66			H3PO4	1.7			
	W	Na2O	12.74	36.82	22.48						
	W	BAO	0.47	0.71							
	W	NiO	0.85	0.63							
	W	Al2O3	2.12	9.20	9.24						
	W	Fe2O3	4.25	6.68							
	W	CR2O3	0.85	1.27							
	W	ZrO2	1.78	2.17							
	W	RUO2	2.38	3.12							
	W	MC03	2.12	3.01							
	W	P2O5	0.21	24.28	33.96						
	W	S03	12.74	10.05							
	W	SiO2	0.85	0.50							
	W	F	0.42	0.08							
	W	RB2O	0.30	0.55							
	W	CS2O	0.30	0.83							
	W	SRO	0.47	0.48							
	W	Y2O3	1.91	4.25							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
381					150.	41.03			5.	2.71	2
	A	NA2O	26.10	15.93			NAOH	2.0			
	A	AL2O3	6.53	6.53			AL (NO3)3-9H2O	.50			
	A	P2O5	26.10	36.49			H3PO4	2.0			
	W	NA2O	11.75	37.85	23.10						
	W	BAO	0.43	0.65							
	W	NIO	0.78	0.58							
	W	AL2O3	1.96	1.97	8.52						
	W	FE2O3	3.92	6.16							
	W	CR2O3	0.78	1.17							
	W	ZRO2	1.64	2.00							
	W	RUO2	2.19	2.87							
	W	MOO3	1.96	2.78							
	W	P2O5	0.20	0.27	36.76						
	W	SO3	11.75	9.26							
	W	SiO2	0.78	0.46							
	W	F	0.39	0.07							
	W	RB2O	0.27	0.50							
	W	CS2O	0.27	0.76							
	W	SRO	0.43	0.44							
	W	Y2O3	1.76	3.92							
382					950.	36.98			5.	2.67	2
	A	NA2O	24.21	14.36			NAOH	2.5			
	A	AL2O3	6.05	5.91			AL (NO3)3-9H2O	.50			
	A	P2O5	31.47	42.75			H3PO4	2.5			
	W	NA2O	10.89	6.46	20.82						
	W	BAO	0.40	0.59							
	W	NIO	0.73	0.52							
	W	AL2O3	1.82	1.77	7.68						
	W	FE2O3	3.63	5.55							
	W	CR2O3	0.73	1.06							
	W	ZRO2	1.53	1.80							
	W	RUO2	2.03	2.59							
	W	MOO3	1.82	2.50							
	W	P2O5	0.18	0.25	43.00						
	W	SO3	10.89	8.35							
	W	SiO2	0.73	0.42							
	W	F	0.36	0.07							
	W	RB2O	0.25	0.45							
	W	CS2O	0.25	0.69							
	W	SRO	0.40	0.40							
	W	Y2O3	1.63	3.53							
383					950.	32.18			5.	2.63	2
	A	NA2O	30.73	18.74			NAOH	3.0			
	A	AL2O3	6.15	6.17			AL (NO3)3-9H2O	.60			
	A	P2O5	30.73	42.92			H3PO4	3.0			
	W	NA2O	9.22	5.62	24.36						
	W	BAO	0.34	0.51							
	W	NIO	0.61	0.45							
	W	AL2O3	1.54	1.54	7.71						
	W	FE2O3	3.37	4.83							
	W	CR2O3	0.61	0.92							
	W	ZRO2	1.29	1.56							
	W	RUO2	1.72	2.25							
	W	MOO3	1.54	2.18							
	W	P2O5	0.15	0.21	43.13						
	W	SO3	9.22	7.26							
	W	SiO2	0.61	0.36							
	W	F	0.31	0.06							
	W	RB2O	0.22	0.40							
	W	CS2O	0.22	0.60							
	W	SRO	0.34	0.34							
	W	Y2O3	1.38	3.07							
384					950.	25.62			3.	2.70	2
	A	Li2O	21.02	6.54			LiOH-H2O	7.5			
	A	NA2O	23.23	15.00			NAOH	8.5			
	A	AL2O3	6.64	7.05			AL (NO3)3-9H2O	2.4			
	A	P2O5	33.98	45.79			H3PO4	11.			
	W	NA2O	2.49	1.61	16.60						
	W	BAO	0.55	0.87							
	W	NIO	0.17	0.13							
	W	AL2O3	0.41	0.44	7.49						
	W	FE2O3	0.83	1.38							
	W	CR2O3	0.17	0.26							
	W	ZRO2	2.78	3.57							
	W	RUO2	1.72	1.41							
	W	MOO3	2.19	3.29							
	W	P2O5	0.04	0.06	45.85						
	W	SO3	2.49	2.08							
	W	SiO2	0.17	0.10							
	W	F	0.08	0.02							
	W	RB2O	0.17	0.34							
	W	CS2O	0.64	1.88							
	W	SRO	0.83	0.90							
	W	Y2O3	3.10	7.29							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
385					950.	26.32			3.	2.68	2
	A	LI2O	21.56	6.72			LI OH-H2O	7.5			
	A	NA2O	23.83	15.40			NA OH	8.5			
	A	AL2O3	4.25	4.52			AL (NO3)3-9H2O	1.5			
	A	P2O5	31.77	47.03			H3PO4	11.			
	W	NA2O	2.55	1.65	17.05						
	W	BAO	3.56	0.90							
	W	NIO	3.17	0.13							
	W	AL2O3	3.43	0.45	4.98						
	W	FE2O3	3.85	1.42							
	W	CR2O3	3.17	3.27							
	W	ZRO2	2.85	3.66							
	W	RUO2	1.34	1.45							
	W	MOO3	2.25	3.38							
	W	P2O5	31.81	0.06	47.10						
	W	SO3	2.55	2.13							
	W	SI02	3.17	0.11							
	W	F	3.09	0.02							
	W	RB2O	3.18	0.35							
	W	CS2O	0.66	1.93							
	W	SRO	0.86	0.93							
	W	Y2O3	3.18	7.40							
386					900.	26.72			2.	2.66	2
	A	LI2O	21.87	6.82			LI OH-H2O	7.5			
	A	NA2O	24.17	15.64			NA OH	8.5			
	A	AL2O3	2.88	3.06			AL (NO3)3-9H2O	1.0			
	A	P2O5	32.23	47.75			H3PO4	11.			
	W	NA2O	2.59	1.68	17.31						
	W	BAO	3.57	0.91							
	W	NIO	3.17	0.13							
	W	AL2O3	3.43	0.46	3.52						
	W	FE2O3	3.86	1.44							
	W	CR2O3	3.17	0.27							
	W	ZRO2	2.89	3.72							
	W	RUO2	1.06	1.47							
	W	MOO3	2.28	3.43							
	W	P2O5	32.27	0.06	47.82						
	W	SO3	2.59	2.16							
	W	SI02	3.17	0.11							
	W	F	3.09	0.02							
	W	RB2O	3.18	0.35							
	W	CS2O	0.67	1.96							
	W	SRO	0.87	0.94							
	W	Y2O3	3.23	7.61							
387					850.	27.14			2.	2.65	2
	A	LI2O	22.19	6.93			LI OH-H2O	7.5			
	A	NA2O	24.52	15.88			NA OH	8.5			
	A	AL2O3	1.46	1.56			AL (NO3)3-9H2O	1.50			
	A	P2O5	32.73	43.50			H3PO4	11.			
	W	NA2O	2.63	1.70	17.58						
	W	BAO	3.58	0.92							
	W	NIO	3.18	0.14							
	W	AL2O3	3.44	0.47	2.02						
	W	FE2O3	3.88	1.46							
	W	CR2O3	3.18	0.28							
	W	ZRO2	2.93	3.78							
	W	RUO2	1.07	1.49							
	W	MOO3	2.31	3.48							
	W	P2O5	32.74	0.06	48.56						
	W	SO3	2.63	2.27							
	W	SI02	3.18	0.11							
	W	F	3.09	0.02							
	W	RB2O	3.18	0.36							
	W	CS2O	0.68	1.99							
	W	SRO	0.88	0.95							
	W	Y2O3	3.27	7.72							
388					850.	27.57			3.	2.64	2
	A	LI2O	22.52	7.04			LI OH-H2O	7.5			
	A	NA2O	24.89	16.13			NA OH	8.5			
	A	P2O5	33.18	49.26			H3PO4	11.			
	W	NA2O	2.67	1.73	17.86						
	W	BAO	3.58	0.94							
	W	NIO	3.18	0.14							
	W	AL2O3	3.44	0.47							
	W	FE2O3	3.89	1.48							
	W	CR2O3	3.18	0.28							
	W	ZRO2	2.98	3.84							
	W	RUO2	1.09	1.51							
	W	MOO3	2.35	3.54							
	W	P2O5	33.22	0.07	49.33						
	W	SO3	2.67	2.23							
	W	SI02	3.18	0.11							
	W	F	3.09	0.02							
	W	RB2O	3.19	0.36							
	W	CS2O	0.69	2.03							
	W	SRO	0.89	0.97							
	W	Y2O3	3.32	7.85							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
389					850.	27.43			3.	2.64	2
	A	LI2O	22.45	7.07			LI OH-H2O	7.5			
	A	NA2O	24.81	16.05			NAOH	8.5			
	A	FE2O3	0.30	0.49			FE (NO3)3-9H2O	.10			
	A	P2O5	33.78	49.02			H3PO4	11.			
	W	NA2O	2.66	27.47	17.77						
	W	BAO	0.58	0.93							
	W	NI0	0.18	0.14							
	W	AL2O3	0.44	0.47							
	W	FE2O3	0.89	1.18	1.97						
	W	CR2O3	0.18	0.28							
	W	ZR02	2.97	3.82							
	W	RU02	1.08	1.51							
	W	MG03	2.34	3.52							
	W	P2O5	0.04	33.13	49.09						
	W	S03	2.66	2.22							
	W	SI02	0.18	0.11							
	W	F	0.09	0.02							
	W	RB2O	0.19	0.36							
	W	CS2O	0.69	2.02							
	W	SRO	0.89	0.96							
	W	Y2O3	3.31	7.81							
390					850.	27.30			3.	2.65	2
	A	LI2O	22.38	6.97			LI OH-H2O	7.5			
	A	NA2O	24.74	15.97			NAOH	8.5			
	A	FE2O3	0.59	0.98			FE (NO3)3-9H2O	.20			
	A	P2O5	32.98	48.78			H3PO4	11.			
	W	NA2O	2.65	27.39	17.69						
	W	BAO	0.58	0.93							
	W	NI0	0.18	0.14							
	W	AL2O3	0.44	0.47							
	W	FE2O3	0.88	1.47	2.45						
	W	CR2O3	0.18	0.28							
	W	ZR02	2.96	3.83							
	W	RU02	1.08	1.50							
	W	MG03	2.33	3.50							
	W	P2O5	0.04	33.03	48.85						
	W	S03	2.65	2.21							
	W	SI02	0.18	0.11							
	W	F	0.09	0.02							
	W	RB2O	0.18	0.36							
	W	CS2O	0.68	2.01							
	W	SRO	0.89	0.96							
	W	Y2O3	3.30	7.77							
391					850.	27.16			3.	2.65	2
	A	LI2O	22.32	6.93			LI OH-H2O	7.5			
	A	NA2O	24.67	15.90			NAOH	8.5			
	A	FE2O3	0.88	1.46			FE (NO3)3-9H2O	.30			
	A	P2O5	32.89	48.54			H3PO4	11.			
	W	NA2O	2.64	27.31	17.60						
	W	BAO	0.58	0.92							
	W	NI0	0.18	0.14							
	W	AL2O3	0.44	0.47							
	W	FE2O3	0.88	1.76	2.93						
	W	CR2O3	0.18	0.28							
	W	ZR02	2.95	3.78							
	W	RU02	1.08	1.49							
	W	MG03	2.33	3.48							
	W	P2O5	0.04	32.93	48.61						
	W	S03	2.64	2.20							
	W	SI02	0.18	0.11							
	W	F	0.09	0.02							
	W	RB2O	0.18	0.36							
	W	CS2O	0.68	2.00							
	W	SRO	0.89	0.95							
	W	Y2O3	3.29	7.73							
392					950.	32.01			5.	2.65	2
	A	LI2O	18.28	5.85			LI OH-H2O	2.4			
	A	NA2O	21.33	14.15			NAOH	2.7			
	A	AL2O3	5.79	6.32			AL (NO3)3-9H2O	.75			
	A	P2O5	27.42	41.67			H3PO4	3.6			
	W	NA2O	6.86	28.19	18.70						
	W	BAO	0.37	0.60							
	W	NI0	0.46	0.37							
	W	AL2O3	1.14	6.93	7.57						
	W	FE2O3	2.29	3.91							
	W	CR2O3	0.46	0.74							
	W	ZR02	2.06	2.71							
	W	RU02	0.73	1.04							
	W	MG03	1.60	2.47							
	W	P2O5	0.11	27.54	41.85						
	W	S03	6.86	5.88							
	W	SI02	0.46	0.29							
	W	F	0.23	0.05							
	W	RB2O	0.14	0.27							
	W	CS2O	0.43	1.31							
	W	SRO	0.64	0.71							
	W	Y2O3	2.35	5.69							

WASTE STUDIES---CRVL

NCTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	GCNC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
393					1000.	32.72			5.	2.63	2
	A	LI2O	18.55	5.98			LI OH-H2O	2.4			
	A	NA2O	21.76	14.46			NA OH	2.7			
	A	AL2O3	3.89	4.25			AL (NO3)3-9H2O	.50			
	A	P2O5	27.98	42.59			H3PO4	3.6			
	W	NA2O	6.99	4.65	19.11						
	W	BAO	0.37	0.61							
	W	NIO	0.47	0.37							
	W	AL2O3	1.17	1.27	5.52						
	W	FE2O3	2.33	3.99							
	W	CR2O3	0.47	0.76							
	W	ZRO2	2.10	2.77							
	W	RUO2	0.75	1.07							
	W	MOO3	1.63	2.52							
	W	P2O5	0.12	0.18	42.77						
	W	SO3	6.99	6.01							
	W	SI02	0.47	0.30							
	W	F	0.23	0.05							
	W	RB2O	0.14	0.28							
	W	CS2O	0.44	1.34							
	W	SRO	0.65	0.73							
	W	Y2O3	2.40	5.82							
394					900.	33.40			5.	2.61	2
	A	LI2O	19.01	6.10			LI OH-H2O	2.4			
	A	NA2O	22.17	14.77			NA OH	2.7			
	A	AL2O3	2.06	2.26			AL (NO3)3-9H2O	.25			
	A	P2O5	28.51	43.48			H3PO4	3.6			
	W	NA2O	7.13	4.75	19.51						
	W	BAO	0.38	0.63							
	W	NIO	0.48	0.38							
	W	AL2O3	1.19	1.30	3.56						
	W	FE2O3	2.38	4.08							
	W	CR2O3	0.48	0.78							
	W	ZRO2	2.14	2.83							
	W	RUO2	0.76	1.09							
	W	MOO3	1.66	2.57							
	W	P2O5	0.12	0.18	43.66						
	W	SO3	7.13	6.13							
	W	SI02	0.48	0.31							
	W	F	0.24	0.05							
	W	RB2O	0.14	0.29							
	W	CS2O	0.45	1.37							
	W	SRO	0.67	0.74							
	W	Y2O3	2.45	5.94							
395					850.	34.17			5.	2.59	2
	A	LI2O	19.41	6.24			LI OH-H2O	2.4			
	A	NA2O	22.64	15.11			NA OH	2.7			
	A	P2O5	29.11	44.48			H3PO4	3.6			
	W	NA2O	7.28	4.86	19.96						
	W	BAO	0.39	0.64							
	W	NIO	0.49	0.39							
	W	AL2O3	1.21	1.33							
	W	FE2O3	2.45	4.17							
	W	CR2O3	0.49	0.79							
	W	ZRO2	2.18	2.90							
	W	RUO2	0.78	1.11							
	W	MOO3	1.70	2.63							
	W	P2O5	0.12	0.19	44.67						
	W	SO3	7.28	6.27							
	W	SI02	0.49	0.31							
	W	F	0.24	0.05							
	W	RB2O	0.15	0.29							
	W	CS2O	0.46	1.40							
	W	SRO	0.68	0.76							
	W	Y2O3	2.50	6.07							
396					850.	33.70			5.	2.61	2
	A	LI2O	19.25	6.16			LI OH-H2O	2.4			
	A	NA2O	22.46	14.90			NA OH	2.7			
	A	FE2O3	0.80	1.37			FE (NO3)3-9H2O	.10			
	A	P2O5	28.88	43.87			H3PO4	3.6			
	W	NA2O	7.22	4.79	19.69						
	W	BAO	0.39	0.63							
	W	NIO	0.48	0.38							
	W	AL2O3	1.20	1.31							
	W	FE2O3	2.41	4.11	5.48						
	W	CR2O3	0.48	0.78							
	W	ZRO2	2.17	2.86							
	W	RUO2	0.77	1.10							
	W	MOO3	1.68	2.60							
	W	P2O5	0.12	0.18	44.06						
	W	SO3	7.22	6.19							
	W	SI02	0.48	0.31							
	W	F	0.24	0.05							
	W	RB2O	0.14	0.29							
	W	CS2O	0.46	1.38							
	W	SRO	0.67	0.75							
	W	Y2O3	2.48	5.99							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
397					850.	33.24			5.	2.63	2
	A	Li2O	19.10	6.07			LiOH-H2O	2.4			
	A	Na2O	22.28	14.70			NaOH	2.7			
	A	Fe2O3	1.59	2.71			Fe(NO3)3-9H2O	2.0			
	A	P2O5	28.65	43.28			H3PO4	3.6			
	W	Na2O	7.16	4.72	19.42						
	W	BaO	0.38	0.62							
	W	NiO	0.48	0.38							
	W	Al2O3	1.19	1.30							
	W	Fe2O3	2.39	4.06	6.76						
	W	Cr2O3	0.48	0.77							
	W	ZrO2	2.15	2.82							
	W	RuO2	0.76	1.08							
	W	MoO3	1.67	2.56							
	W	P2O5	0.12	0.18	43.46						
	W	SO3	7.16	6.13							
	W	SiO2	0.48	0.31							
	W	F	0.24	0.05							
	W	RB2O	0.14	0.29							
	W	CS2O	0.45	1.36							
	W	SrO	0.67	0.74							
	W	Y2O3	2.46	5.91							
398					850.	36.97			2.	2.63	2
	A	Li2O	17.65	5.45			H3PO4	3.4			
	A	Na2O	17.65	11.33			LiOH-H2O	1.9			
	A	P2O5	31.58	46.29			NaOH	1.9			
	W	Na2O	8.36	5.35	16.65						
	W	BaO	0.45	0.71							
	W	NiO	0.56	0.45							
	W	Al2O3	1.39	1.47							
	W	Fe2O3	2.79	4.60							
	W	Cr2O3	0.56	0.87							
	W	ZrO2	2.51	3.19							
	W	RuO2	0.89	1.23							
	W	MoO3	1.95	2.90							
	W	P2O5	0.14	0.20	46.50						
	W	SO3	8.36	6.91							
	W	SiO2	0.56	0.35							
	W	F	0.28	0.05							
	W	RB2O	0.17	0.32							
	W	CS2O	0.53	1.54							
	W	SrO	0.78	0.83							
	W	Y2O3	1.64	3.83							
	W	CE02	1.23	2.18							
399					850.	39.99			2.	2.66	2
	A	Li2O	16.79	5.15			H3PO4	3.0			
	A	Na2O	16.79	10.68			LiOH-H2O	1.7			
	A	P2O5	30.34	44.19			NaOH	1.7			
	W	Na2O	9.10	5.79	16.46						
	W	BaO	0.49	0.76							
	W	NiO	0.61	0.47							
	W	Al2O3	1.52	1.59							
	W	Fe2O3	3.03	4.97							
	W	Cr2O3	0.61	0.95							
	W	ZrO2	2.73	3.45							
	W	RuO2	0.97	1.33							
	W	MoO3	2.12	3.14							
	W	P2O5	0.15	0.22	44.41						
	W	SO3	9.10	7.48							
	W	SiO2	0.61	0.37							
	W	F	0.30	0.06							
	W	RB2O	0.18	0.35							
	W	CS2O	0.58	1.67							
	W	SrO	0.85	0.90							
	W	Y2O3	1.79	4.15							
	W	CE02	1.34	2.36							
400					850.	43.74			3.	2.70	2
	A	Li2O	15.46	4.68			H3PO4	2.5			
	A	Na2O	15.46	9.71			LiOH-H2O	1.4			
	A	P2O5	29.13	41.88			NaOH	1.4			
	W	Na2O	10.08	6.33	16.04						
	W	BaO	0.54	0.84							
	W	NiO	0.67	0.51							
	W	Al2O3	1.68	1.74							
	W	Fe2O3	3.36	5.44							
	W	Cr2O3	0.67	1.04							
	W	ZrO2	3.02	3.78							
	W	RuO2	1.78	1.45							
	W	MoO3	2.35	3.43							
	W	P2O5	0.17	0.24	42.12						
	W	SO3	10.08	8.18							
	W	SiO2	0.67	0.41							
	W	F	0.34	0.06							
	W	RB2O	0.20	0.38							
	W	CS2O	0.64	1.82							
	W	SrO	0.94	0.99							
	W	Y2O3	1.98	4.54							
	W	CE02	1.48	2.58							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
401					850.	41.86			3.	2.68	2
	A	LI20	16.01	4.87			H3PO4	2.7			
	A	NA20	16.01	10.10			LI OH-H2O	1.5			
	A	P205	29.89	43.17			NAOH	1.5			
	W	NA20	9.61	25.62	16.16						
	W	BA0	0.51	0.80							
	W	NI0	0.64	0.49							
	W	AL203	1.60	1.66							
	W	FE203	3.20	5.20							
	W	CR203	0.64	0.99							
	W	ZR02	2.88	3.61							
	W	RU02	1.02	1.39							
	W	MC03	2.24	3.28							
	W	P205	0.16	30.05	43.40						
	W	S03	9.61	7.83							
	W	SI02	0.64	0.39							
	W	F	0.32	0.06							
	W	RB20	0.19	0.37							
	W	CS20	0.61	1.74							
	W	SRO	0.90	0.95							
	W	Y203	1.89	4.34							
	W	CE02	1.41	2.47							
402					850.	36.57			2.	2.63	2
	A	LI20	17.32	5.39			H3PO4	3.4			
	A	NA20	17.32	11.17			LI OH-H2O	1.9			
	A	CA0	1.82	1.06			NAOH	1.9			
	A	P205	31.00	45.80			CA (NO3)2-4H2O	1.0			
	W	NA20	8.21	25.53	16.47						
	W	BA0	0.44	0.70							
	W	NI0	0.55	0.43							
	W	AL203	1.37	1.45							
	W	FE203	2.74	4.55							
	W	CR203	0.55	0.87							
	W	ZR02	2.46	3.16							
	W	RU02	0.88	1.21							
	W	MC03	1.91	2.87							
	W	P205	0.14	31.14	46.00						
	W	S03	8.21	6.84							
	W	SI02	0.55	0.34							
	W	F	0.27	0.05							
	W	RB20	0.16	0.32							
	W	CS20	0.52	1.52							
	W	SRO	0.77	0.83							
	W	Y203	1.61	3.79							
	W	CE02	1.20	2.16							
403					850.	39.53			2.	2.66	2
	A	LI20	16.46	5.09			H3PO4	3.0			
	A	NA20	16.46	10.55			LI OH-H2O	1.7			
	A	CA0	1.98	1.15			NAOH	1.7			
	A	P205	29.74	43.68			CA (NO3)2-4H2O	1.0			
	W	NA20	8.92	25.38	16.27						
	W	BA0	0.48	0.76							
	W	NI0	0.59	0.46							
	W	AL203	1.49	1.57							
	W	FE203	2.97	4.91							
	W	CR203	0.59	0.94							
	W	ZR02	2.68	3.41							
	W	RU02	0.95	1.31							
	W	MC03	2.08	3.10							
	W	P205	0.15	29.89	43.90						
	W	S03	8.92	7.39							
	W	SI02	0.59	0.37							
	W	F	0.30	0.06							
	W	RB20	0.18	0.35							
	W	CS20	0.57	1.65							
	W	SRO	0.83	0.89							
	W	Y203	1.75	4.10							
	W	CE02	1.31	2.33							
404					850.	43.19			3.	2.70	2
	A	LI20	15.12	4.62			H3PO4	2.5			
	A	NA20	15.12	9.58			LI OH-H2O	1.4			
	A	CA0	2.19	1.26			NAOH	1.4			
	A	P205	28.49	41.35			CA (NO3)2-4H2O	1.0			
	W	NA20	9.86	24.98	15.83						
	W	BA0	0.53	0.82							
	W	NI0	0.66	0.50							
	W	AL203	1.64	1.71							
	W	FE203	3.29	5.37							
	W	CR203	0.66	1.02							
	W	ZR02	2.96	3.73							
	W	RU02	1.05	1.43							
	W	MC03	2.30	3.39							
	W	P205	0.16	28.65	41.59						
	W	S03	9.86	8.07							
	W	SI02	0.66	0.40							
	W	F	0.33	0.06							
	W	RB20	0.20	0.38							
	W	CS20	0.62	1.80							
	W	SRO	0.92	0.98							
	W	Y203	1.94	4.48							
	W	CE02	1.45	2.55							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
405					850.	41.36			3.	2.68	2
	A	LI20	15.68	4.81			H3PO4	2.7			
	A	NA20	15.68	9.98			LI OH-H2O	1.5			
	A	CA0	2.39	1.20			NAOH	1.5			
	A	P205	29.27	42.65			CA (NO3)2-4H2O	.10			
	W	NA20	9.41	25.09	5.99	15.96					
	W	BA0	0.50		0.79						
	W	NI0	0.63		0.48						
	W	AL203	1.57		1.64						
	W	FE203	3.14		5.14						
	W	CR203	0.63		0.98						
	W	ZR02	2.82		3.57						
	W	RU02	1.00		1.37						
	W	MO03	2.20		3.24						
	W	P205	0.16	29.42	0.23	42.88					
	W	S03	9.41		7.73						
	W	SI02	0.63		0.39						
	W	F	3.31		0.06						
	W	RB20	0.19		0.36						
	W	CS20	0.60		1.72						
	W	SRO	0.88		0.93						
	W	Y203	1.85		4.29						
	W	CE02	1.38		2.44						
406					850.	36.19			2.	2.63	2
	A	LI20	17.01	5.33			H3PO4	3.4			
	A	NA20	17.01	11.06			LI OH-H2O	1.9			
	A	CA0	3.58	2.11			NAOH	1.9			
	A	P205	30.45	45.32			CA (NO3)2-4H2O	.20			
	W	NA20	8.06	25.07	5.24	16.29					
	W	BA0	0.43		0.69						
	W	NI0	0.54		0.42						
	W	AL203	1.34		1.44						
	W	FE203	2.69		4.50						
	W	CR203	0.54		0.86						
	W	ZR02	2.42		3.12						
	W	RU02	0.86		1.20						
	W	MO03	1.88		2.34						
	W	P205	0.13	30.58	0.20	45.52					
	W	S03	8.06		6.77						
	W	SI02	0.54		0.34						
	W	F	0.27		0.05						
	W	RB20	0.16		0.32						
	W	CS20	0.51		1.51						
	W	SRO	0.75		0.82						
	W	Y203	1.59		3.75						
	W	CE02	1.18		2.13						
407					850.	39.08			2.	2.66	2
	A	LI20	16.14	5.03			H3PO4	3.0			
	A	NA20	16.14	10.43			LI OH-H2O	1.7			
	A	CA0	3.89	2.27			NAOH	1.7			
	A	P205	29.16	43.18			CA (NO3)2-4H2O	.20			
	W	NA20	8.75	24.89	5.66	16.09					
	W	BA0	0.47		0.75						
	W	NI0	0.58		0.45						
	W	AL203	1.46		1.55						
	W	FE203	2.92		4.86						
	W	CR203	0.58		0.92						
	W	ZR02	2.62		3.37						
	W	RU02	0.93		1.30						
	W	MO03	2.04		3.07						
	W	P205	0.15	29.31	0.22	43.40					
	W	S03	8.75		7.31						
	W	SI02	0.58		0.37						
	W	F	0.29		0.06						
	W	RB20	0.17		0.34						
	W	CS20	0.55		1.63						
	W	SRO	0.82		0.88						
	W	Y203	1.72		4.05						
	W	CE02	1.28		2.30						
408					850.	42.65			3.	2.70	2
	A	LI20	14.80	4.56			H3PO4	2.5			
	A	NA20	14.80	9.46			LI OH-H2O	1.4			
	A	CA0	4.29	2.48			NAOH	1.4			
	A	P205	27.88	40.84			CA (NO3)2-4H2O	.20			
	W	NA20	9.65	24.45	6.17	15.64					
	W	BA0	0.51		0.81						
	W	NI0	0.64		0.50						
	W	AL203	1.61		1.69						
	W	FE203	3.22		5.30						
	W	CR203	0.64		1.01						
	W	ZR02	2.89		3.68						
	W	RU02	1.03		1.41						
	W	MO03	2.25		3.35						
	W	P205	0.16	28.04	0.24	41.08					
	W	S03	9.65		7.97						
	W	SI02	0.64		0.40						
	W	F	0.32		0.06						
	W	RB20	0.19		0.37						
	W	CS20	0.61		1.78						
	W	SRO	0.90		0.96						
	W	Y203	1.90		4.42						
	W	CE02	1.42		2.51						

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
409					850.	40.87			3.	2.68	2
	A	LI20	15.36	4.75			H3PO4	2.7			
	A	NA20	15.36	9.86			LI OH-H2O	1.5			
	A	CA0	4.10	2.38			NAOH	1.5			
	A	P205	28.67	42.14			CA (NO3)2-4H2O	.20			
	W	NA20	9.21	24.57	15.77						
	W	BA0	0.49	0.78							
	W	NI0	0.61	0.48							
	W	AL203	1.54	1.62							
	W	FE203	3.07	5.08							
	W	CR203	0.61	0.97							
	W	ZR02	2.76	3.53							
	W	RU02	0.98	1.35							
	W	MC03	2.15	3.21							
	W	P205	0.15	28.82	42.37						
	W	S03	9.21	7.64							
	W	SI02	0.61	0.38							
	W	F	0.31	0.06							
	W	RB20	0.18	0.36							
	W	CS20	0.58	1.70							
	W	SRO	0.86	0.92							
	W	Y203	1.81	4.24							
	W	CE02	1.35	2.41							
410					850.	35.81			2.	2.63	2
	A	LI20	16.72	5.28			H3PO4	3.4			
	A	NA20	16.72	13.94			LI OH-H2O	1.9			
	A	CA0	5.28	3.13			NAOH	1.9			
	A	P205	29.91	44.84			CA (NO3)2-4H2O	.30			
	W	NA20	7.92	24.63	16.13						
	W	BA0	0.42	0.68							
	W	NI0	0.53	0.42							
	W	AL203	1.32	1.42							
	W	FE203	2.64	4.45							
	W	CR203	0.53	0.85							
	W	ZR02	2.38	3.09							
	W	RU02	0.84	1.19							
	W	MC03	1.85	2.81							
	W	P205	0.13	30.04	45.04						
	W	S03	7.92	6.70							
	W	SI02	0.53	0.34							
	W	F	0.26	0.05							
	W	RB20	0.16	0.31							
	W	CS20	0.50	1.49							
	W	SRO	0.74	0.81							
	W	Y203	1.56	3.71							
	W	CE02	1.16	2.11							
411					850.	38.64			2.	2.66	2
	A	LI20	15.83	4.97			H3PO4	3.0			
	A	NA20	15.83	10.32			LI OH-H2O	1.7			
	A	CA0	5.72	3.37			NAOH	1.7			
	A	P205	28.61	42.70			CA (NO3)2-4H2O	.30			
	W	NA20	8.58	24.41	15.91						
	W	BA0	0.46	0.74							
	W	NI0	0.57	0.45							
	W	AL203	1.43	1.53							
	W	FE203	2.86	4.80							
	W	CR203	0.57	0.91							
	W	ZR02	2.57	3.34							
	W	RU02	0.92	1.28							
	W	MC03	2.30	3.03							
	W	P205	0.14	28.75	42.91						
	W	S03	8.58	7.23							
	W	SI02	0.57	0.36							
	W	F	0.29	0.06							
	W	RB20	0.17	0.34							
	W	CS20	0.54	1.61							
	W	SRO	0.80	0.87							
	W	Y203	1.69	4.01							
	W	CE02	1.26	2.28							
412					850.	40.39			3.	2.68	2
	A	LI20	15.05	4.70			H3PO4	2.7			
	A	NA20	15.05	9.74			LI OH-H2O	1.5			
	A	CA0	6.02	3.53			NAOH	1.5			
	A	P205	28.39	41.65			CA (NO3)2-4H2O	.30			
	W	NA20	9.03	24.08	15.59						
	W	BA0	0.48	0.77							
	W	NI0	0.60	0.47							
	W	AL203	1.50	1.60							
	W	FE203	3.01	5.02							
	W	CR203	0.60	0.96							
	W	ZR02	2.71	3.49							
	W	RU02	0.96	1.34							
	W	MC03	2.11	3.17							
	W	P205	0.15	28.24	41.87						
	W	S03	9.03	7.55							
	W	SI02	0.60	0.38							
	W	F	0.30	0.06							
	W	RB20	0.18	0.35							
	W	CS20	0.57	1.68							
	W	SRO	0.84	0.91							
	W	Y203	1.78	4.19							
	W	CE02	1.32	2.38							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
413					850.	42.13			5.	2.70	2
	A	LI2O	14.49	4.51			H3PO4	2.5			
	A	NA2O	14.49	9.35			LI OH-H2O	1.4			
	A	CAO	6.30	3.68			NAOH	1.4			
	A	P2O5	27.29	43.34			CA (NO3)2-4H2O	.30			
	W	NA2O	9.45	23.93		15.45					
	W	BAO	0.50	0.80							
	W	NIO	0.63	0.49							
	W	AL2O3	1.57	1.67							
	W	FE2O3	3.15	5.24							
	W	CR2O3	0.63	1.00							
	W	ZRO2	2.33	3.64							
	W	RUO2	1.01	1.40							
	W	MOO3	2.20	3.30							
	W	P2O5	0.16	0.23		40.57					
	W	SO3	9.45	7.88							
	W	SI02	0.63	0.39							
	W	F	0.31	0.06							
	W	RB2O	0.19	0.37							
	W	CS2O	0.60	1.76							
	W	SRO	0.88	0.95							
	W	Y2O3	1.86	4.37							
	W	CEO2	1.39	2.48							
414					850.	35.44			2.	2.63	2
	A	LI2O	16.43	5.22			H3PO4	3.4			
	A	NA2O	16.43	10.83			LI OH-H2O	1.9			
	A	CAO	6.92	4.13			NAOH	1.9			
	A	P2O5	29.39	44.38			CA (NO3)2-4H2O	.40			
	W	NA2O	7.78	24.21		15.96					
	W	BAO	0.41	0.68							
	W	NIO	0.52	0.41							
	W	AL2O3	1.30	1.41							
	W	FE2O3	2.59	4.41							
	W	CR2O3	0.52	0.84							
	W	ZRO2	2.33	3.06							
	W	RUO2	0.83	1.18							
	W	MOO3	1.82	2.78							
	W	P2O5	0.13	0.20		44.58					
	W	SO3	7.78	6.63							
	W	SI02	0.52	0.33							
	W	F	0.26	0.05							
	W	RB2O	0.16	0.31							
	W	CS2O	0.49	1.48							
	W	SRO	0.73	0.80							
	W	Y2O3	1.53	3.68							
	W	CEO2	1.14	2.09							
415					850.	38.21			2.	2.66	2
	A	LI2O	15.53	4.92			H3PO4	3.0			
	A	NA2O	15.53	11.20			LI OH-H2O	1.7			
	A	CAO	7.49	4.45			NAOH	1.7			
	A	P2O5	28.07	42.22			CA (NO3)2-4H2O	.40			
	W	NA2O	8.42	23.95		15.73					
	W	BAO	0.45	0.73							
	W	NIO	0.56	0.44							
	W	AL2O3	1.40	1.52							
	W	FE2O3	2.81	4.75							
	W	CR2O3	0.56	0.90							
	W	ZRO2	2.53	3.30							
	W	RUO2	0.93	1.27							
	W	MOO3	1.97	3.00							
	W	P2O5	0.14	0.21		42.43					
	W	SO3	8.42	7.14							
	W	SI02	0.56	0.36							
	W	F	0.28	0.06							
	W	RB2O	0.17	0.33							
	W	CS2O	0.53	1.59							
	W	SRO	0.79	0.86							
	W	Y2O3	1.66	3.96							
	W	CEO2	1.24	2.25							
416					850.	39.92			3.	2.68	2
	A	LI2O	14.75	4.64			H3PO4	2.7			
	A	NA2O	14.75	9.63			LI OH-H2O	1.5			
	A	CAO	7.87	4.65			NAOH	1.5			
	A	P2O5	27.54	41.16			CA (NO3)2-4H2O	.40			
	W	NA2O	8.85	23.61		15.41					
	W	BAO	0.47	0.76							
	W	NIO	0.59	0.46							
	W	AL2O3	1.48	1.58							
	W	FE2O3	2.95	4.96							
	W	CR2O3	0.59	0.94							
	W	ZRO2	2.66	3.45							
	W	RUO2	0.94	1.32							
	W	MOO3	2.07	3.13							
	W	P2O5	0.15	0.22		41.39					
	W	SO3	8.85	7.46							
	W	SI02	0.59	0.37							
	W	F	0.30	0.06							
	W	RB2O	0.18	0.35							
	W	CS2O	0.56	1.66							
	W	SRO	0.83	0.90							
	W	Y2O3	1.74	4.14							
	W	CEO2	1.30	2.35							

WASTE STUDIES---ORNL

NOTE---UNCER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
417					850.	41.62			3.	2.70	2
	A	LI2O	14.19	4.45			H3PO4	2.5			
	A	NA2O	14.19	9.24			LI OH-H2O	1.4			
	A	CAO	8.22	4.84			NAOH	1.4			
	A	P2O5	26.73	39.85			CA (NO3)2-4H2O	.40			
	W	NA2O	9.25	6.02	15.26						
	W	BAO	0.49	0.79							
	W	NIO	0.62	0.48							
	W	AL2O3	1.54	1.65							
	W	FE2O3	3.08	5.17							
	W	CR2O3	0.62	0.98							
	W	ZR02	2.78	3.59							
	W	RUO2	0.99	1.38							
	W	MO3	2.16	3.26							
	W	P2O5	0.15	0.23	40.08						
	W	S03	9.25	7.78							
	W	SI02	0.62	0.39							
	W	F	0.31	0.06							
	W	RB2O	0.19	0.36							
	W	CS2O	0.59	1.73							
	W	SRO	0.86	0.94							
	W	Y2O3	1.82	4.32							
	W	CE02	1.36	2.45							
418					850.	35.26			2.	2.63	2
	A	LI2O	16.29	5.19			H3PO4	3.4			
	A	NA2O	16.29	10.77			LI OH-H2O	1.9			
	A	CAO	7.71	4.62			NAOH	1.9			
	A	P2O5	29.14	44.15			CA (NO3)2-4H2O	.45			
	W	NA2O	7.71	5.10	15.88						
	W	BAO	0.41	0.67							
	W	NIO	0.51	0.41							
	W	AL2O3	1.29	1.40							
	W	FE2O3	2.57	4.38							
	W	CR2O3	0.51	0.83							
	W	ZR02	2.31	3.04							
	W	RUO2	0.82	1.17							
	W	MO3	1.80	2.77							
	W	P2O5	0.13	0.19	44.35						
	W	S03	7.71	6.59							
	W	SI02	0.51	0.33							
	W	F	0.26	0.05							
	W	RB2O	0.15	0.31							
	W	CS2O	0.49	1.47							
	W	SRO	0.72	0.80							
	W	Y2O3	1.52	3.66							
	W	CE02	1.13	2.08							
419					850.	38.00			2.	2.66	2
	A	LI2O	15.39	4.89			H3PO4	3.0			
	A	NA2O	15.39	10.14			LI OH-H2O	1.7			
	A	CAO	8.34	4.98			NAOH	1.7			
	A	P2O5	27.81	41.99			CA (NO3)2-4H2O	.45			
	W	NA2O	8.34	5.50	15.64						
	W	BAO	0.44	0.73							
	W	NIO	0.56	0.44							
	W	AL2O3	1.39	1.51							
	W	FE2O3	2.78	4.72							
	W	CR2O3	0.56	0.90							
	W	ZR02	2.50	3.28							
	W	RUO2	0.89	1.26							
	W	MO3	1.95	2.98							
	W	P2O5	0.14	0.21	42.20						
	W	S03	8.34	7.11							
	W	SI02	0.56	0.36							
	W	F	0.28	0.06							
	W	RB2O	0.17	0.33							
	W	CS2O	0.53	1.58							
	W	SRO	0.78	0.86							
	W	Y2O3	1.64	3.94							
	W	CE02	1.22	2.24							
420					850.	39.69			3.	2.68	2
	A	LI2O	14.61	4.62			H3PO4	2.7			
	A	NA2O	14.61	9.57			LI OH-H2O	1.5			
	A	CAO	8.77	5.20			NAOH	1.5			
	A	P2O5	27.27	40.93			CA (NO3)2-4H2O	.45			
	W	NA2O	8.77	5.74	15.32						
	W	BAO	0.47	0.76							
	W	NIO	0.58	0.46							
	W	AL2O3	1.46	1.57							
	W	FE2O3	2.92	4.93							
	W	CR2O3	0.58	0.94							
	W	ZR02	2.63	3.43							
	W	RUO2	0.94	1.32							
	W	MO3	2.05	3.11							
	W	P2O5	0.15	0.22	41.15						
	W	S03	8.77	7.42							
	W	SI02	0.58	0.37							
	W	F	0.29	0.06							
	W	RB2O	0.18	0.35							
	W	CS2O	0.56	1.65							
	W	SRO	0.82	0.90							
	W	Y2O3	1.72	4.12							
	W	CE02	1.29	2.34							

WASTE STUDIES---CRNL

NCTE---UNDER COLUMN 1, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
421					850.	41.37			3.	2.70	2
	A	LI2O	14.14	4.43			H3PO4	2.5			
	A	NA2O	14.04	9.18			LI OH-H2O	1.4			
	A	CAO	9.16	5.42			NAOH	1.4			
	A	P2O5	26.46	39.61			CA (NO3)2-4H2O	.45			
	W	NA2O	9.16	23.20	15.17						
	W	BAO	0.49	0.79							
	W	NI0	0.61	0.48							
	W	AL2O3	1.53	1.64							
	W	FE2O3	3.05	5.14							
	W	CR2O3	0.61	0.98							
	W	ZR02	2.75	3.57							
	W	RU02	0.98	1.37							
	W	MC03	2.14	3.24							
	W	P2O5	0.15	26.61	39.84						
	W	S03	9.16	7.73							
	W	SI02	0.61	0.39							
	W	F	0.31	0.36							
	W	RB2O	0.18	0.36							
	W	CS2O	0.58	1.72							
	W	SRO	0.85	0.93							
	W	Y2O3	1.83	4.29							
	W	CE02	1.34	2.44							
422					900.	40.00			7.	2.95	7
	A	LI2O	17.88	4.78			H3PO4	2.0			
	A	NA2O	17.88	10.33			LI OH-H2O	1.1			
	A	CAO	3.25	1.70			NAOH	1.1			
	A	P2O5	32.50	45.00			CA (NO3)2-4H2O	0.1			
	W	NA2O	2.24	20.12	11.62						
	W	BAO	0.63	0.71							
	W	NI0	0.16	0.11							
	W	AL2O3	0.02	0.02							
	W	FE2O3	15.11	22.49							
	W	CR2O3	0.20	0.28							
	W	ZR02	2.11	2.43							
	W	RU02	1.84	2.28							
	W	MC03	2.57	3.44							
	W	P2O5	0.05	32.55	43.06						
	W	SI02	0.33	0.18							
	W	RB2O	0.12	0.20							
	W	CS2O	0.56	1.48							
	W	SRO	0.53	0.49							
	W	Y2O3	1.93	4.06							
	W	AG2O	0.13	0.28							
423					900.	34.76			5.	2.85	7
	A	LI2O	19.40	5.43			H3PO4	2.5			
	A	NA2O	19.40	11.25			LI OH-H2O	1.4			
	A	P2O5	36.55	48.56			NAOH	1.4			
	W	NA2O	1.94	21.34	12.38						
	W	BAO	0.55	0.79							
	W	NI0	0.14	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	13.07	19.54							
	W	CR2O3	0.17	0.24							
	W	ZR02	1.83	2.11							
	W	RU02	1.59	1.98							
	W	MC03	2.22	2.99							
	W	P2O5	0.04	36.59	48.62						
	W	SI02	0.28	0.16							
	W	RB2O	0.10	0.18							
	W	CS2O	0.49	1.28							
	W	SRO	0.44	0.42							
	W	Y2O3	1.67	3.52							
	W	AG2O	0.11	0.24							
424					900.	43.19			7.	3.01	7
	A	LI2O	18.71	4.89			H3PO4	1.8			
	A	NA2O	18.71	10.14			LI OH-H2O	1.0			
	A	P2O5	32.41	41.78			NAOH	1.0			
	W	NA2O	2.48	20.49	11.53						
	W	BAO	0.70	0.98							
	W	NI0	0.18	0.12							
	W	AL2O3	0.02	0.02							
	W	FE2O3	16.75	24.29							
	W	CR2O3	0.22	0.30							
	W	ZR02	2.34	2.62							
	W	RU02	2.04	2.46							
	W	MC03	2.85	3.72							
	W	P2O5	0.05	32.47	41.85						
	W	SI02	0.36	0.20							
	W	RB2O	0.13	0.22							
	W	CS2O	0.62	1.59							
	W	SRO	0.56	0.53							
	W	Y2O3	2.14	4.38							
	W	AG2O	0.14	0.30							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
425					900.	40.69			7.	2.96	7
	A	Li2O	18.48	5.06			H3PO4	2.0			
	A	Na2O	18.48	11.50			LiOH-H2O	1.1			
	A	P2O5	33.59	43.74			NaOH	1.1			
	W	Na2O	2.32	1.32	11.82						
	W	BAO	0.66	0.92							
	W	NiO	0.17	0.12							
	W	AL2O3	0.72	0.07							
	W	FE2O3	15.62	22.88							
	W	CR2O3	0.20	0.28							
	W	ZrO2	2.18	2.47							
	W	RUO2	1.90	2.32							
	W	MOO3	2.65	3.50							
	W	P2O5	0.05	0.07	43.80						
	W	SiO2	0.34	0.19							
	W	RB2O	0.12	0.21							
	W	CS2O	0.58	1.50							
	W	SRO	0.52	0.49							
	W	Y2O3	1.99	4.13							
	W	AG2O	0.13	0.29							
426					900.	38.47			7.	2.92	7
	A	Li2O	18.89	5.22			H3PO4	2.2			
	A	Na2O	18.89	10.83			LiOH-H2O	1.2			
	A	P2O5	34.65	45.48			NaOH	1.2			
	W	Na2O	2.17	1.25	12.08						
	W	BAO	0.61	0.87							
	W	NiO	0.16	0.11							
	W	AL2O3	0.02	0.01							
	W	FE2O3	14.64	21.63							
	W	CR2O3	0.19	0.27							
	W	ZrO2	2.05	2.33							
	W	RUO2	1.78	2.19							
	W	MOO3	2.49	3.31							
	W	P2O5	0.05	0.06	45.54						
	W	SiO2	0.31	0.18							
	W	RB2O	0.11	0.20							
	W	CS2O	0.54	1.42							
	W	SRO	0.49	0.47							
	W	Y2O3	1.87	3.90							
	W	AG2O	0.13	0.27							
427					900.	33.04			3.	2.82	7
	A	Li2O	19.86	5.61			H3PO4	2.8			
	A	Na2O	19.86	11.63			LiOH-H2O	1.5			
	A	P2O5	37.07	49.72			NaOH	1.5			
	W	Na2O	1.83	1.07	12.70						
	W	BAO	0.52	0.75							
	W	NiO	0.13	0.09							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.31	18.58							
	W	CR2O3	0.16	0.23							
	W	ZrO2	1.72	2.00							
	W	RUO2	1.50	1.88							
	W	MOO3	2.09	2.85							
	W	P2O5	0.04	0.05	49.77						
	W	SiO2	0.26	0.15							
	W	RB2O	0.10	0.17							
	W	CS2O	0.46	1.22							
	W	SRO	0.41	0.40							
	W	Y2O3	1.57	3.35							
	W	AG2O	0.11	0.23							
428					900.	34.21			7.	2.84	7
	A	Li2O	18.87	5.34			H3PO4	2.5			
	A	Na2O	18.87	11.08			LiOH-H2O	1.4			
	A	SiO2	2.73	1.56			NaOH	1.4			
	A	P2O5	35.55	47.81			SiO2	1.0			
	W	Na2O	1.89	1.11	12.19						
	W	BAO	0.53	0.77							
	W	NiO	0.14	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.72	19.24							
	W	CR2O3	0.16	0.24							
	W	ZrO2	1.78	2.07							
	W	RUO2	1.55	1.95							
	W	MOO3	2.16	2.95							
	W	P2O5	0.04	0.06	47.86						
	W	SiO2	0.27	0.16	1.71						
	W	RB2O	0.10	0.17							
	W	CS2O	0.47	1.26							
	W	SRO	0.42	0.42							
	W	Y2O3	1.62	3.47							
	W	AG2O	0.11	0.24							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CCNC. M/L	APP. PORE FREE D.	WASTE TYPE	
429					900.	33.69			7.	2.83	7
	A	LI20	18.37	5.26			H3PO4	2.5			
	A	NA20	18.37	10.91			LI OH-H2O	1.4			
	A	SI02	5.32	3.07			NAOH	1.4			
	A	P205	34.60	47.07			SI02	.20			
	W	NA20	1.84	20.20	1.09	12.00					
	W	BA0	0.52	0.76							
	W	NI0	0.13	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.38	18.94							
	W	CR203	0.16	0.23							
	W	ZR02	1.73	2.04							
	W	RU02	1.51	1.92							
	W	MC03	2.10	2.90							
	W	P205	0.74	34.64	0.05	47.13					
	W	SI02	0.27	5.59	0.15	3.22					
	W	RB20	0.10	0.17							
	W	CS20	0.46	1.24							
	W	SRO	0.41	0.41							
	W	Y203	1.58	3.42							
	W	AG20	0.11	0.24							
430					900.	33.18			7.	2.82	7
	A	LI20	17.89	5.18			H3PO4	2.5			
	A	NA20	17.89	10.74			LI OH-H2O	1.4			
	A	SI02	7.78	4.53			NAOH	1.4			
	A	P205	33.71	46.36			SI02	.30			
	W	NA20	1.79	19.68	1.07	11.82					
	W	BA0	0.51	0.75							
	W	NI0	0.13	0.09							
	W	AL203	0.01	0.01							
	W	FE203	12.06	18.66							
	W	CR203	0.16	0.23							
	W	ZR02	1.69	2.01							
	W	RU02	1.47	1.89							
	W	MC03	2.05	2.86							
	W	P205	0.04	33.75	0.05	46.42					
	W	SI02	0.26	8.04	0.15	4.68					
	W	RB20	0.09	0.17							
	W	CS20	0.45	1.22							
	W	SRO	0.40	0.40							
	W	Y203	1.54	3.36							
	W	AG20	0.10	0.23							
431					-0.	32.69			6.	2.81	7
	A	LI20	17.44	5.10			H3PO4	2.5			
	A	NA20	17.44	10.59			LI OH-H2O	1.4			
	A	SI02	10.11	5.95			NAOH	1.4			
	A	P205	32.85	45.67			SI02	.40			
	W	NA20	1.74	19.18	1.06	11.64					
	W	BA0	0.49	0.74							
	W	NI0	0.13	0.09							
	W	AL203	0.01	0.01							
	W	FE203	11.75	18.38							
	W	CR203	0.15	0.23							
	W	ZR02	1.64	1.98							
	W	RU02	1.43	1.86							
	W	MC03	2.00	2.81							
	W	P205	0.04	32.89	0.05	45.73					
	W	SI02	0.25	10.36	0.15	6.10					
	W	RB20	0.09	0.17							
	W	CS20	0.44	1.21							
	W	SRO	0.39	0.40							
	W	Y203	1.50	3.31							
	W	AG20	0.10	0.23							
432					-0.	32.40			6.	2.81	7
	A	LI20	17.18	5.06			H3PO4	2.5			
	A	NA20	17.18	10.49			LI OH-H2O	1.4			
	A	SI02	11.45	6.78			NAOH	1.4			
	A	P205	32.36	45.27			SI02	.46			
	W	NA20	1.72	18.90	1.05	11.54					
	W	BA0	0.49	0.73							
	W	NI0	0.12	0.09							
	W	AL203	0.01	0.01							
	W	FE203	11.58	18.22							
	W	CR203	0.15	0.22							
	W	ZR02	1.62	1.96							
	W	RU02	1.41	1.85							
	W	MC03	1.97	2.79							
	W	P205	0.04	32.40	0.05	45.32					
	W	SI02	0.25	11.70	0.15	6.93					
	W	RB20	0.09	0.17							
	W	CS20	0.43	1.20							
	W	SRO	0.39	0.39							
	W	Y203	1.48	3.29							
	W	AG20	0.10	0.23							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
433					900.	34.44			7.	2.83	7
	A	LI2O	19.13	5.38			H3PO4	2.5			
	A	VA2O	19.13	11.15			LI OH-H2O	1.4			
	A	B2O3	1.39	0.91			NAOH	1.4			
	A	P2O5	36.04	46.12			H3BO3	1.0			
	W	NA2O	1.91	1.12	12.27						
	W	BAO	0.54	0.78							
	W	NI0	0.14	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.89	19.37							
	W	CR2O3	0.17	0.24							
	W	ZR02	1.80	2.09							
	W	RU02	1.57	1.96							
	W	MO3	2.19	2.97							
	W	P2O5	0.04	0.06	48.18						
	W	SI02	0.28	0.16							
	W	RB2O	0.10	0.18							
	W	CS2O	0.48	1.27							
	W	SRO	0.43	0.42							
	W	Y2O3	1.64	3.49							
	W	AG2O	0.11	0.24							
434					900.	34.13			7.	2.82	7
	A	LI2O	18.87	5.33			H3PO4	2.5			
	A	NA2O	18.87	11.05			LI OH-H2O	1.4			
	A	B2O3	2.73	1.80			NAOH	1.4			
	A	P2O5	35.55	47.69			H3BO3	1.20			
	W	NA2O	1.89	1.11	12.16						
	W	BAO	0.53	0.77							
	W	NI0	0.14	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.72	19.19							
	W	CR2O3	0.16	0.24							
	W	ZR02	1.78	2.07							
	W	RU02	1.55	1.95							
	W	MO3	2.16	2.94							
	W	P2O5	0.04	0.06	47.74						
	W	SI02	0.27	0.16							
	W	RB2O	0.10	0.17							
	W	CS2O	0.47	1.26							
	W	SRO	0.42	0.42							
	W	Y2O3	1.62	3.46							
	W	AG2O	0.11	0.24							
435					900.	33.83			7.	2.81	7
	A	LI2O	18.61	5.28			H3PO4	2.5			
	A	NA2O	18.61	10.95			LI OH-H2O	1.4			
	A	B2O3	4.05	2.68			NAOH	1.4			
	A	P2O5	35.07	47.26			H3BO3	1.30			
	W	NA2O	1.86	1.10	12.05						
	W	BAO	0.53	0.77							
	W	NI0	0.13	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.54	19.02							
	W	CR2O3	0.16	0.23							
	W	ZR02	1.75	2.05							
	W	RU02	1.53	1.93							
	W	MO3	2.13	2.91							
	W	P2O5	0.04	0.05	47.32						
	W	SI02	0.27	0.15							
	W	RB2O	0.10	0.17							
	W	CS2O	0.47	1.25							
	W	SRO	0.42	0.41							
	W	Y2O3	1.60	3.43							
	W	AG2O	0.11	0.24							
436					900.	33.53			7.	2.80	7
	A	LI2O	18.37	5.23			H3PO4	2.5			
	A	NA2O	18.37	10.86			LI OH-H2O	1.4			
	A	B2O3	5.32	3.54			NAOH	1.4			
	A	P2O5	34.60	46.85			H3BO3	1.40			
	W	NA2O	1.84	1.09	11.94						
	W	BAO	0.52	0.76							
	W	NI0	0.13	0.09							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.38	18.85							
	W	CR2O3	0.16	0.23							
	W	ZR02	1.73	2.03							
	W	RU02	1.51	1.91							
	W	MO3	2.10	2.89							
	W	P2O5	0.04	0.05	46.90						
	W	SI02	0.27	0.15							
	W	RB2O	0.10	0.17							
	W	CS2O	0.46	1.24							
	W	SRO	0.41	0.41							
	W	Y2O3	1.58	3.40							
	W	AG2O	0.11	0.24							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
437					900.	33.35			7.	2.79	7
	A	LI20	18.22	5.21			H3PO4	2.5			
	A	NA20	18.22	10.80			LI OH-H2O	1.4			
	A	B203	6.37	4.04			NAOH	1.4			
	A	P205	34.33	46.60			H3BO3	.46			
	W	NA20	1.82	23.74	11.88						
	W	BA0	0.51	0.76							
	W	NIO	0.13	0.09							
	W	AL203	0.01	0.01							
	W	FE203	12.28	18.75							
	W	CR203	0.16	0.23							
	W	ZR02	1.72	2.02							
	W	RU02	1.49	1.90							
	W	MO3	2.39	2.87							
	W	P205	0.04	34.37	46.65						
	W	SI02	0.26	0.15							
	W	RB20	0.10	0.17							
	W	CS20	0.46	1.23							
	W	SRO	0.41	0.41							
	W	Y203	1.57	3.36							
	W	AG20	0.11	0.23							
438					850.	34.25			7.	2.84	7
	A	LI20	18.87	5.35			H3PO4	2.5			
	A	NA20	18.87	11.09			LI OH-H2O	1.4			
	A	CA0	2.73	1.45			NAOH	1.4			
	A	P205	35.55	47.86			CA (NO3)2-4H2O	.10			
	W	NA20	1.89	20.76	12.20						
	W	BA0	0.53	0.78							
	W	NIO	0.14	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.72	19.26							
	W	CR203	0.16	0.24							
	W	ZR02	1.78	2.08							
	W	RU02	1.55	1.95							
	W	MO3	2.16	2.95							
	W	P205	0.04	35.59	47.91						
	W	SI02	0.27	0.16							
	W	RB20	0.10	0.17							
	W	CS20	0.47	1.26							
	W	SRO	0.42	0.42							
	W	Y203	1.62	3.47							
	W	AG20	0.11	0.24							
439					850.	33.76			7.	2.84	7
	A	LI20	18.37	5.27			H3PO4	2.5			
	A	NA20	18.37	10.93			LI OH-H2O	1.4			
	A	CA0	5.32	2.87			NAOH	1.4			
	A	P205	34.60	47.17			CA (NO3)2-4H2O	.20			
	W	NA20	1.84	20.20	12.03						
	W	BA0	0.52	0.76							
	W	NIO	0.13	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.38	18.98							
	W	CR203	0.16	0.23							
	W	ZR02	1.73	2.05							
	W	RU02	1.51	1.93							
	W	MO3	2.10	2.91							
	W	P205	0.04	34.64	47.23						
	W	SI02	0.27	0.15							
	W	RB20	0.10	0.17							
	W	CS20	0.46	1.25							
	W	SRO	0.41	0.41							
	W	Y203	1.58	3.42							
	W	AG20	0.11	0.24							
440					900.	34.39			7.	2.86	7
	A	LI20	18.87	5.37			H3PO4	2.5			
	A	NA20	18.37	11.14			LI OH-H2O	1.4			
	A	MO3	2.73	1.05			NAOH	1.4			
	A	P205	35.55	48.05			MS (NO3)2-6H2O	.10			
	W	NA20	1.89	20.76	12.25						
	W	BA0	0.53	0.78							
	W	NIO	0.14	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.72	19.34							
	W	CR203	0.16	0.24							
	W	ZR02	1.78	2.09							
	W	RU02	1.55	1.96							
	W	MO3	2.16	2.96							
	W	P205	0.04	35.59	48.11						
	W	SI02	0.27	0.16							
	W	RB20	0.10	0.18							
	W	CS20	0.47	1.27							
	W	SRO	0.42	0.42							
	W	Y203	1.62	3.49							
	W	AG20	0.11	0.24							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
441					90.	34.03			7.	2.86	7
	A	LI2O	18.37	5.31			H3PO4	2.5			
	A	NA2O	18.37	11.02			LiOH-H2O	1.4			
	A	MGO	5.32	2.08			NaOH	1.4			
	A	P2O5	34.60	47.55			MS (NO3)2-6H2O	.20			
	W	NA2O	1.84	1.10	12.12						
	W	BAO	0.52	0.77							
	W	NIO	0.13	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.38	19.14							
	W	CR2O3	0.16	0.24							
	W	ZRO2	1.73	2.06							
	W	RUO2	1.51	1.94							
	W	MOO3	2.10	2.93							
	W	P2O5	0.04	0.05	47.61						
	W	SiO2	0.27	0.15							
	W	RB2O	0.10	0.17							
	W	CS2O	0.46	1.26							
	W	SRO	0.41	0.41							
	W	Y2O3	1.58	3.45							
	W	AG2O	0.11	0.24							
442					-0.	32.97			6.	2.84	7
	A	LI2O	17.71	5.15			H3PO4	2.5			
	A	NA2O	17.71	10.68			LiOH-H2O	1.4			
	A	MGO	2.05	0.81			NaOH	1.4			
	A	AL2O3	1.33	1.02			ATTA-GEL-40	.03			
	A	SiO2	5.65	3.30							
	A	P2O5	33.36	46.08							
	W	NA2O	1.77	1.07	11.75						
	W	BAO	0.53	0.75							
	W	NIO	0.13	0.09							
	W	AL2O3	0.01	0.01	1.03						
	W	FE2O3	11.93	18.54							
	W	CR2O3	0.15	0.23							
	W	ZRO2	1.67	2.00							
	W	RUO2	1.45	1.88							
	W	MOO3	2.03	2.84							
	W	P2O5	0.04	0.05	46.13						
	W	SiO2	0.26	0.15	3.45						
	W	RB2O	0.39	0.17							
	W	CS2O	0.44	1.22							
	W	SRO	0.40	0.40							
	W	Y2O3	1.52	3.34							
	W	AG2O	0.10	0.23							
443					-0.	31.34			6.	2.83	7
	A	LI2O	16.25	4.89			H3PO4	2.5			
	A	NA2O	16.25	10.15			LiOH-H2O	1.4			
	A	MGO	4.00	1.63			NaOH	1.4			
	A	AL2O3	1.88	1.94			ATTA-GEL-40	.06			
	A	SiO2	10.36	6.27							
	A	P2O5	30.61	43.79							
	W	NA2O	1.62	1.01	11.16						
	W	BAO	0.46	0.71							
	W	NIO	0.12	0.09							
	W	AL2O3	0.01	0.01	1.95						
	W	FE2O3	10.95	17.62							
	W	CR2O3	0.14	0.22							
	W	ZRO2	1.53	1.90							
	W	RUO2	1.33	1.79							
	W	MOO3	1.86	2.70							
	W	P2O5	0.04	0.05	43.84						
	W	SiO2	0.24	0.14	6.42						
	W	RB2O	0.38	0.16							
	W	CS2O	0.41	1.16							
	W	SRO	0.36	0.38							
	W	Y2O3	1.40	3.18							
	W	AG2O	0.09	0.22							
444					-0.	29.88			6.	2.83	7
	A	LI2O	15.04	4.66			H3PO4	2.5			
	A	NA2O	15.04	9.68			LiOH-H2O	1.4			
	A	MGO	5.45	2.28			NaOH	1.4			
	A	AL2O3	2.62	2.77			ATTA-GEL-40	.08			
	A	SiO2	14.39	8.97							
	A	P2O5	28.34	41.75							
	W	NA2O	1.50	0.97	10.64						
	W	BAO	0.43	0.68							
	W	NIO	0.11	0.08							
	W	AL2O3	0.01	0.01	2.78						
	W	FE2O3	10.14	16.80							
	W	CR2O3	0.13	0.21							
	W	ZRO2	1.42	1.81							
	W	RUO2	1.23	1.70							
	W	MOO3	1.72	2.57							
	W	P2O5	0.03	0.05	41.80						
	W	SiO2	0.22	0.14	9.11						
	W	RB2O	0.38	0.15							
	W	CS2O	0.38	1.10							
	W	SRO	0.34	0.36							
	W	Y2O3	1.29	3.03							
	W	AG2O	0.09	0.21							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
445					900.	40.13			5.	2.94	7
	A	LI2O	19.50	5.45			H3PO4	2.0			
	A	NA2O	19.50	11.30			LI OH-H2O	1.2			
	A	P2O5	32.50	43.13			NAOH	1.2			
	W	NA2O	2.24	1.30	12.60						
	W	BAO	0.63	0.91							
	W	NI0	0.16	0.11							
	W	AL2O3	0.02	0.02							
	W	FE2O3	15.11	22.56							
	W	CR2O3	0.20	0.28							
	W	ZR02	2.11	2.43							
	W	RU02	1.84	2.29							
	W	MO03	2.57	3.46							
	W	P2O5	0.05	0.06	43.19						
	W	SI02	0.33	0.18							
	W	RB2O	0.12	0.20							
	W	CS2O	0.56	1.48							
	W	SRO	0.50	0.49							
	W	Y2O3	1.93	4.07							
	W	AG2O	0.13	0.28							
446					900.	38.51			7.	2.90	7
	A	LI2O	22.21	6.54			H3PO4	2.0			
	A	NA2O	22.21	13.56			LI OH-H2O	1.5			
	A	P2O5	29.61	41.40			NAOH	1.5			
	W	NA2O	2.04	1.25	14.80						
	W	BAO	0.58	0.87							
	W	NI0	0.15	0.11							
	W	AL2O3	0.01	0.01							
	W	FE2O3	13.77	21.66							
	W	CR2O3	0.18	0.27							
	W	ZR02	1.92	2.34							
	W	RU02	1.68	2.20							
	W	MO03	2.34	3.32							
	W	P2O5	0.04	0.06	41.46						
	W	SI02	0.30	0.18							
	W	RB2O	0.11	0.20							
	W	CS2O	0.51	1.42							
	W	SRO	0.46	0.47							
	W	Y2O3	1.76	3.91							
	W	AG2O	0.12	0.27							
447					900.	37.22			5.	2.87	7
	A	LI2O	24.20	7.41			H3PO4	2.0			
	A	NA2O	24.20	15.37			LI OH-H2O	1.8			
	A	P2O5	27.50	40.00			NAOH	1.8			
	W	NA2O	1.90	1.21	16.58						
	W	BAO	0.54	0.84							
	W	NI0	0.14	0.11							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.79	20.93							
	W	CR2O3	0.16	0.26							
	W	ZR02	1.79	2.26							
	W	RU02	1.56	2.12							
	W	MO03	2.17	3.20							
	W	P2O5	0.04	0.06	40.06						
	W	SI02	0.27	0.17							
	W	RB2O	0.10	0.19							
	W	CS2O	0.48	1.37							
	W	SRO	0.43	0.45							
	W	Y2O3	1.63	3.77							
	W	AG2O	0.11	0.26							
448					900.	36.10			7.	2.84	7
	A	LI2O	25.79	8.17			H3PO4	2.0			
	A	NA2O	25.79	16.94			LI OH-H2O	2.0			
	A	P2O5	25.79	38.80			NAOH	2.0			
	W	NA2O	1.78	1.17	18.11						
	W	BAO	0.50	0.82							
	W	NI0	0.13	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	11.99	20.30							
	W	CR2O3	0.15	0.25							
	W	ZR02	1.68	2.19							
	W	RU02	1.46	2.06							
	W	MO03	2.34	3.11							
	W	P2O5	0.04	0.06	38.86						
	W	SI02	0.26	0.16							
	W	RB2O	0.09	0.18							
	W	CS2O	0.45	1.33							
	W	SRO	0.40	0.44							
	W	Y2O3	1.53	3.66							
	W	AG2O	0.10	0.25							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
449					900.	34.26			7.	2.84	7
	A	LI2O	20.40	5.81			H3PO4	2.5			
	A	NA2O	20.40	12.36			LI OH-H2O	1.5			
	A	P2O5	35.36	47.87			NAOH	1.5			
	W	NA2O	1.88	22.27	13.17						
	W	BAO	0.53	0.78							
	W	NIO	0.14	0.10							
	W	AL2O3	0.01	0.01							
	W	FE2O3	12.65	19.26							
	W	CR2O3	0.16	0.24							
	W	ZRO2	1.77	2.08							
	W	RUO2	1.54	1.95							
	W	MOO3	2.15	2.95							
	W	P2O5	0.04	0.06	47.92						
	W	SI02	0.27	0.16							
	W	RB2O	0.10	0.17							
	W	CS2O	0.47	1.26							
	W	SRO	0.42	0.42							
	W	Y2O3	1.61	3.47							
	W	AG2O	0.11	0.24							
450					850.	33.23			7.	2.81	7
	A	LI2O	22.35	6.62			H3PO4	2.5			
	A	NA2O	22.35	13.72			LI OH-H2O	1.8			
	A	P2O5	33.02	46.43			NAOH	1.8			
	W	NA2O	1.75	24.11	14.80						
	W	BAO	0.50	0.75							
	W	NIO	0.13	0.09							
	W	AL2O3	0.01	0.01							
	W	FE2O3	11.81	18.68							
	W	CR2O3	0.15	0.23							
	W	ZRO2	1.65	2.02							
	W	RUO2	1.44	1.90							
	W	MOO3	2.31	2.86							
	W	P2O5	0.04	0.05	46.48						
	W	SI02	0.25	0.15							
	W	RB2O	0.09	0.17							
	W	CS2O	0.44	1.23							
	W	SRO	0.39	0.40							
	W	Y2O3	1.51	3.37							
	W	AG2O	0.10	0.23							
451					850.	32.33			5.	2.79	7
	A	LI2O	23.94	7.32			H3PO4	2.5			
	A	NA2O	23.94	15.17			LI OH-H2O	2.0			
	A	P2O5	31.12	45.18			NAOH	2.0			
	W	NA2O	1.65	25.59	16.22						
	W	BAO	0.47	0.73							
	W	NIO	0.12	0.09							
	W	AL2O3	0.31	0.01							
	W	FE2O3	11.13	18.18							
	W	CR2O3	0.14	0.22							
	W	ZRO2	1.56	1.96							
	W	RUO2	1.36	1.84							
	W	MOO3	1.89	2.78							
	W	P2O5	0.04	0.05	45.23						
	W	SI02	0.24	0.15							
	W	RB2O	0.09	0.16							
	W	CS2O	0.41	1.19							
	W	SRO	0.37	0.39							
	W	Y2O3	1.42	3.28							
	W	AG2O	0.10	0.23							
452					900.	31.62			3.	2.77	7
	A	LI2O	25.13	7.87			H3PO4	2.5			
	A	NA2O	25.13	16.32			LI OH-H2O	2.3			
	A	P2O5	29.70	44.18			NAOH	2.3			
	W	NA2O	1.58	26.71	17.35						
	W	BAO	0.45	0.72							
	W	NIO	0.11	0.09							
	W	AL2O3	0.01	0.01							
	W	FE2O3	10.62	17.78							
	W	CR2O3	0.14	0.22							
	W	ZRO2	1.49	1.92							
	W	RUO2	1.29	1.80							
	W	MOO3	1.80	2.72							
	W	P2O5	0.03	0.05	44.24						
	W	SI02	0.23	0.14							
	W	RB2O	0.08	0.16							
	W	CS2O	0.40	1.17							
	W	SRO	0.45	0.38							
	W	Y2O3	1.35	3.21							
	W	AG2O	0.09	0.22							

WASTE STUDIES---GRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
453					900.	30.29			7.	2.74	7
	A	LI20	27.21	8.91			H3PO4	2.5			
	A	NA20	27.21	18.48			LI OH-H2O	2.5			
	A	P205	27.21	42.32			NAOH	2.5			
	W	NA20	1.44	28.66	19.46						
	W	BA0	0.41	0.69							
	W	NI0	0.10	0.09							
	W	AL203	0.01	0.01							
	W	FE203	9.73	17.03							
	W	CR203	0.13	0.21							
	W	ZR02	1.36	1.84							
	W	RU02	1.18	1.73							
	W	MC03	1.65	2.61							
	W	P205	0.03	27.25	42.37						
	W	SI02	0.21	0.14							
	W	RB20	0.08	0.15							
	W	CS20	0.36	1.12							
	W	SRO	0.32	0.57							
	W	Y203	1.24	3.07							
	W	AG20	0.08	0.21							
454					1050.	62.31			7.	3.40	7
	A	B203	14.77	7.56			H3PO4	.90			
	A	P205	28.91	30.14			NAOH	.30			
	W	NA20	4.43	2.02			H3BO3	.45			
	W	BA0	1.25	1.41							
	W	NI0	0.32	0.18							
	W	AL203	0.03	0.02							
	W	FE203	29.87	35.03							
	W	CR203	0.39	0.43							
	W	ZR02	4.18	3.78							
	W	RU02	3.64	3.55							
	W	MC03	5.07	5.37							
	W	P205	0.10	29.00	30.24						
	W	SI02	0.64	0.28							
	W	RB20	0.23	0.32							
	W	CS20	1.11	2.30							
	W	SRO	1.00	0.76							
	W	Y203	3.81	6.32							
	W	AG20	0.26	0.44							
455					1050.	60.22			7.	3.33	7
	A	LI20	4.66	1.09			H3PO4	.90			
	A	NA20	4.66	2.26			LI OH-H2O	.15			
	A	B203	13.40	7.30			NAOH	.15			
	A	P205	26.21	29.13			H3BO3	.45			
	W	NA20	4.02	8.68	4.21						
	W	BA0	1.14	1.36							
	W	NI0	0.29	0.17							
	W	AL203	0.03	0.02							
	W	FE203	27.09	33.86							
	W	CR203	0.35	0.42							
	W	ZR02	3.79	3.65							
	W	RU02	3.30	3.44							
	W	MC03	4.60	5.19							
	W	P205	0.09	26.30	29.22						
	W	SI02	0.58	0.27							
	W	RB20	0.21	0.31							
	W	CS20	1.01	2.22							
	W	SRO	0.90	0.73							
	W	Y203	3.45	6.11							
	W	AG20	0.23	0.42							
456					1050.	63.87			7.	3.50	7
	A	LI20	5.21	1.16			H3PO4	.90			
	A	NA20	5.21	2.40			LI OH-H2O	.15			
	A	B203	3.25	1.68			NAOH	.15			
	A	P205	29.28	30.89			H3BO3	.10			
	W	NA20	4.49	9.70	4.47						
	W	BA0	1.27	1.45							
	W	NI0	0.33	0.18							
	W	AL203	0.03	0.02							
	W	FE203	30.26	35.91							
	W	CR203	0.39	0.44							
	W	ZR02	4.23	3.87							
	W	RU02	3.68	3.64							
	W	MC03	5.14	5.50							
	W	P205	0.10	29.38	31.00						
	W	SI02	0.65	0.29							
	W	RB20	0.23	0.33							
	W	CS20	1.13	2.36							
	W	SRO	1.01	0.78							
	W	Y203	3.86	6.48							
	W	AG20	0.26	0.45							

WASTE STUDIES---ORNL

NCTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PURE FREE D.	WASTE TYPE
457					900.	38.07			7.	3.08	7
	A	LI2O	17.88	4.74			LI OH-H2O	1.1			
	A	NA2O	17.88	9.83			NA OH	1.1			
	A	PB0	3.25	6.44			H3PO4	2.0			
	A	P2O5	32.50	40.92			PB0	.10			
	W	NA2O	2.24	11.06							
	W	BA0	0.63	0.86							
	W	NI0	0.16	0.11							
	W	AL2O3	0.02	0.01							
	W	FE2O3	15.11	21.41							
	W	CR2O3	0.20	0.26							
	W	ZR02	2.11	2.31							
	W	RU02	1.84	2.17							
	W	MO03	2.57	3.28							
	W	P2O5	0.05	40.99							
	W	SI02	0.33	0.17							
	W	RB2O	0.12	0.19							
	W	CS2O	0.56	1.41							
	W	SRO	0.50	0.46							
	W	Y2O3	1.93	3.86							
	W	AG2O	0.13	0.27							
458					900.	35.77			7.	3.20	7
	A	LI2O	17.31	4.45			LI OH-H2O	1.1			
	A	NA2O	17.31	9.23			NA OH	1.1			
	A	PB0	6.30	12.09			H3PO4	2.0			
	A	P2O5	31.48	38.45			PB0	.20			
	W	NA2O	2.17	10.39							
	W	BA0	0.61	0.81							
	W	NI0	0.16	0.10							
	W	AL2O3	0.02	0.01							
	W	FE2O3	14.64	20.11							
	W	CR2O3	0.19	0.25							
	W	ZR02	2.05	2.17							
	W	RU02	1.78	2.04							
	W	MO03	2.49	3.08							
	W	P2O5	0.05	38.51							
	W	SI02	0.31	0.16							
	W	RB2O	0.11	0.18							
	W	CS2O	0.54	1.32							
	W	SRO	0.49	0.44							
	W	Y2O3	1.87	3.63							
	W	AG2O	0.13	0.25							
459					900.	31.91			7.	3.43	7
	A	LI2O	16.29	3.97			LI OH-H2O	1.1			
	A	NA2O	16.29	8.24			NA OH	1.1			
	A	PB0	11.85	21.58			H3PO4	2.0			
	A	P2O5	29.61	34.30			PB0	.40			
	W	NA2O	2.04	9.27							
	W	BA0	0.58	0.72							
	W	NI0	0.15	0.09							
	W	AL2O3	0.01	0.01							
	W	FE2O3	13.77	17.94							
	W	CR2O3	0.18	0.22							
	W	ZR02	1.92	1.94							
	W	RU02	1.68	1.82							
	W	MO03	2.34	2.75							
	W	P2O5	0.04	34.35							
	W	SI02	0.30	0.15							
	W	RB2O	0.11	0.16							
	W	CS2O	0.51	1.18							
	W	SRO	0.46	0.39							
	W	Y2O3	1.76	3.24							
	W	AG2O	0.12	0.22							
460					900.	35.65			7.	2.95	7
	A	LI2O	17.31	4.44			LI OH-H2O	1.1			
	A	NA2O	17.31	9.20			NA OH	1.1			
	A	CA0	3.15	6.37			H3PO4	2.0			
	A	PB0	3.15	6.02			CA0	.10			
	A	P2O5	31.48	38.32							
	W	NA2O	2.17	10.36							
	W	BA0	0.61	0.81							
	W	NI0	0.16	0.10							
	W	AL2O3	0.02	0.01							
	W	FE2O3	14.64	20.04							
	W	CR2O3	0.19	0.25							
	W	ZR02	2.05	2.16							
	W	RU02	1.78	2.03							
	W	MO03	2.49	3.07							
	W	P2O5	0.05	38.37							
	W	SI02	0.31	0.16							
	W	RB2O	0.11	0.18							
	W	CS2O	0.54	1.32							
	W	SRO	0.49	0.43							
	W	Y2O3	1.87	3.61							
	W	AG2O	0.13	0.25							

WASTE STUDIES---CRNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WU	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
461					900.	33.62			7.	3.06	7
	A	LI2O	16.78	4.18			LI OH-H2O	1.1			
	A	NA2O	16.78	8.68			NAOH	1.1			
	A	CAO	3.05	6.01			H3PO4	2.0			
	A	PB0	6.11	11.37			CAO	.10			
	A	P2O5	30.52	36.14							
	W	NA2O	2.11	1.09	9.77						
	W	BAO	0.60	0.76							
	W	NIO	0.15	0.10							
	W	AL2O3	0.02	0.01							
	W	FE2O3	14.19	18.91							
	W	CR2O3	0.18	0.23							
	W	ZRO2	1.98	2.04							
	W	RUO2	1.73	1.92							
	W	MOO3	2.41	2.90							
	W	P2O5	0.05	0.05	36.19						
	W	SiO2	0.31	0.15							
	W	RB2O	0.11	0.17							
	W	CS2O	0.53	1.24							
	W	SRO	0.47	0.41							
	W	Y2O3	1.81	3.41							
	W	AG2O	0.12	0.24							
462					-0.	53.01			6.	3.15	7
	A	LI2O	15.37	4.20			H3PO4	1.0			
	A	VA2O	15.37	8.71			NAOH	.70			
	A	B2O3	8.78	5.59			LI OH-H2O	.70			
	A	P2O5	21.96	28.49			H3BO3	.40			
	W	VA2O	3.33	1.72	10.42						
	W	BAO	0.86	1.20							
	W	NIO	0.22	0.15							
	W	AL2O3	0.02	0.02							
	W	FE2O3	20.42	29.81							
	W	CR2O3	0.26	0.37							
	W	ZRO2	2.85	3.22							
	W	RUO2	2.49	3.02							
	W	MOO3	3.47	4.56							
	W	P2O5	0.07	0.09	28.58						
	W	SiO2	0.44	0.24							
	W	RB2O	0.16	0.27							
	W	CS2O	0.76	1.96							
	W	SRO	0.68	0.64							
	W	Y2O3	2.60	5.38							
	W	AG2O	0.18	0.37							
463					-0.	48.65			6.	3.32	7
	A	LI2O	14.73	3.85			H3PO4	1.0			
	A	NA2O	14.73	7.99			NAOH	.70			
	A	B2O3	8.41	5.13			LI OH-H2O	.70			
	A	PB0	4.21	8.22			H3BO3	.40			
	A	P2O5	21.04	26.15			PB0	.10			
	W	NA2O	2.90	1.58	9.57						
	W	BAO	0.82	1.10							
	W	NIO	0.21	0.14							
	W	AL2O3	0.02	0.02							
	W	FE2O3	19.56	27.36							
	W	CR2O3	0.25	0.34							
	W	ZRO2	2.73	2.95							
	W	RUO2	2.38	2.78							
	W	MOO3	3.32	4.19							
	W	P2O5	0.06	0.08	26.23						
	W	SiO2	0.42	0.22							
	W	RB2O	0.15	0.25							
	W	CS2O	0.73	1.80							
	W	SRO	0.65	0.59							
	W	Y2O3	2.49	4.93							
	W	AG2O	0.17	0.34							
464					900.	37.70			7.	3.06	7
	A	LI2O	17.59	4.69			H3PO4	2.0			
	A	NA2O	17.59	9.73			NAOH	1.1			
	A	B2O3	1.60	0.99			LI OH-H2O	1.1			
	A	PB0	3.20	6.57			H3BO3	.10			
	A	P2O5	31.98	40.52			PB0	.10			
	W	NA2O	2.21	1.22	10.95						
	W	BAO	0.62	0.85							
	W	NIO	0.16	0.11							
	W	AL2O3	0.02	0.01							
	W	FE2O3	14.87	21.20							
	W	CR2O3	0.19	0.26							
	W	ZRO2	2.08	2.29							
	W	RUO2	1.81	2.15							
	W	MOO3	2.53	3.25							
	W	P2O5	0.03	0.06	40.58						
	W	SiO2	0.32	0.17							
	W	RB2O	0.12	0.19							
	W	CS2O	0.55	1.39							
	W	SRO	0.50	0.46							
	W	Y2O3	1.97	3.82							
	W	AG2O	0.13	0.26							

WASTE STUDIES---ORNL

NOTE---UNCER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % W0	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
465					9C0.	37.10			7.	3.06	7
	A	LI20	17.04	4.62			H3P04	2.0			
	A	NA20	17.04	9.58			NAOH	1.1			
	A	CA0	3.10	1.58			LI OH-H2O	1.1			
	A	B203	1.55	0.98			H3B03	.10			
	A	PB0	3.10	6.27			CA (NO3)2-4H2O	.10			
	A	P205	30.99	39.88			PB0	.10			
	W	NA20	2.14	19.18	10.78						
	W	BA0	0.60	0.84							
	W	NI0	0.15	0.10							
	W	AL203	0.02	0.01							
	W	FE203	14.41	20.86							
	W	CR203	0.19	0.26							
	W	ZR02	2.01	2.25							
	W	RU02	1.75	2.12							
	W	MC03	2.45	3.19							
	W	P205	0.05	31.04	39.94						
	W	SI02	0.31	0.17							
	W	RB20	0.11	0.19							
	W	CS20	0.54	1.37							
	W	SRO	0.48	0.45							
	W	Y203	1.84	3.76							
	W	AG20	0.12	0.26							
466					9C0.	33.94			7.	2.83	7
	A	LI20	18.61	5.30			H3P04	2.5			
	A	NA20	18.61	10.99			NAOH	1.4			
	A	CA0	2.70	1.44			LI OH-H2O	1.4			
	A	B203	1.35	0.89			CA (NO3)2-4H2O	.10			
	A	P205	35.07	47.43							
	W	NA20	1.86	20.48	12.09						
	W	BA0	0.53	0.77							
	W	NI0	0.13	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.54	19.09							
	W	CR203	0.16	0.23							
	W	ZR02	1.75	2.06							
	W	RU02	1.53	1.94							
	W	MC03	2.13	2.92							
	W	P205	0.04	35.11	47.48						
	W	SI02	0.27	0.15							
	W	RB20	0.10	0.17							
	W	CS20	0.47	1.25							
	W	SRO	0.42	0.41							
	W	Y203	1.60	3.44							
	W	AG20	0.11	0.24							
467					9C0.	33.76			3.	2.84	7
	A	LI20	18.37	5.27			H3P04	2.5			
	A	NA20	18.37	10.93			NAOH	1.4			
	A	CA0	5.32	2.87			LI OH-H2O	1.4			
	A	P205	34.60	47.17			H3B03	.20			
	W	NA20	1.84	1.09	12.03						
	W	BA0	0.52	0.76							
	W	NI0	0.13	0.10							
	W	AL203	0.01	0.01							
	W	FE203	12.38	18.98							
	W	CR203	0.16	0.23							
	W	ZR02	1.73	2.05							
	W	RU02	1.51	1.93							
	W	MC03	2.10	2.91							
	W	P205	0.04	34.64	47.23						
	W	SI02	0.27	0.15							
	W	RB20	0.10	0.17							
	W	CS20	0.46	1.25							
	W	SRO	0.41	0.41							
	W	Y203	1.58	3.42							
	W	AG20	0.11	0.24							
468					9C0.	33.28			3.	2.84	7
	A	LI20	17.89	5.20			H3P04	2.5			
	A	NA20	17.89	10.78			NAOH	1.4			
	A	CA0	7.78	4.24			LI OH-H2O	1.4			
	A	P205	33.71	46.50			H3B03	.30			
	W	NA20	1.79	1.08	11.86						
	W	BA0	0.51	0.75							
	W	NI0	0.13	0.09							
	W	AL203	0.01	0.01							
	W	FE203	12.06	18.71							
	W	CR203	0.16	0.23							
	W	ZR02	1.69	2.02							
	W	RU02	1.47	1.90							
	W	MC03	2.05	2.87							
	W	P205	0.04	33.75	46.56						
	W	SI02	0.26	0.15							
	W	RB20	0.09	0.17							
	W	CS20	0.45	1.23							
	W	SRO	0.40	0.40							
	W	Y203	1.54	3.37							
	W	AG20	0.10	0.23							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
469					950.	31.35			3.	2.79	7
	A	LI20	20.56	5.89			H3PO4	3.0			
	A	VA20	20.56	12.21			NAOH	1.7			
	A	P205	37.16	50.55			LI OH-H2O	1.7			
	W	NA20	1.71	1.02	13.23						
	W	BA0	1.48	0.71							
	W	N10	0.12	0.09							
	W	AL203	0.11	0.01							
	W	FE203	11.52	17.63							
	W	CR203	0.15	0.22							
	W	ZR02	1.61	1.90							
	W	RU02	1.40	1.79							
	W	MO03	1.96	2.70							
	W	P205	0.04	0.05	50.60						
	W	SI02	0.25	0.14							
	W	RB20	0.19	0.16							
	W	CS20	0.43	1.16							
	W	SRO	0.38	0.38							
	W	Y203	1.47	3.18							
	W	AG20	0.10	0.22							
470					900.	30.54			2.	2.78	7
	A	LI20	19.59	5.73			H3PO4	3.0			
	A	NA20	19.59	11.90			NAOH	1.7			
	A	CA0	4.72	2.59			LI OH-H2O	1.7			
	A	P205	35.40	49.24			H3B03	0.20			
	W	NA20	1.63	0.99	12.88						
	W	BA0	0.46	0.69							
	W	N10	0.12	0.09							
	W	AL203	0.01	0.01							
	W	FE203	10.98	17.17							
	W	CR203	0.14	0.21							
	W	ZR02	1.53	1.85							
	W	RU02	1.34	1.74							
	W	MO03	1.86	2.63							
	W	P205	0.04	0.05	49.29						
	W	SI02	0.24	0.14							
	W	RB20	0.08	0.16							
	W	CS20	0.41	1.13							
	W	SRO	0.37	0.37							
	W	Y203	1.40	3.10							
	W	AG20	0.09	0.21							
471					900.	30.15			2.	2.78	7
	A	LI20	19.14	5.66			H3PO4	3.0			
	A	NA20	19.14	11.74			NAOH	1.7			
	A	CA0	6.92	3.84			LI OH-H2O	1.7			
	A	P205	34.59	48.61			H3B03	0.30			
	W	NA20	1.59	0.98	12.72						
	W	BA0	0.45	0.68							
	W	N10	0.12	0.09							
	W	AL203	0.01	0.01							
	W	FE203	10.72	16.95							
	W	CR203	0.14	0.21							
	W	ZR02	1.50	1.83							
	W	RU02	1.31	1.72							
	W	MO03	1.82	2.60							
	W	P205	0.03	0.05	48.65						
	W	SI02	0.23	0.14							
	W	RB20	0.08	0.15							
	W	CS20	0.40	1.11							
	W	SRO	0.36	0.37							
	W	Y203	1.37	3.06							
	W	AG20	0.09	0.21							
472					900.	27.71			2.	2.72	7
	A	LI20	21.01	6.08			H3PO4	3.5			
	A	NA20	21.01	12.61			NAOH	1.9			
	A	P205	38.99	53.60			LI OH-H2O	1.9			
	W	NA20	1.49	0.90	13.51						
	W	BA0	0.42	0.63							
	W	N10	0.11	0.08							
	W	AL203	0.01	0.01							
	W	FE203	10.37	15.58							
	W	CR203	0.13	0.19							
	W	ZR02	1.41	1.68							
	W	RU02	1.23	1.58							
	W	MO03	1.71	2.39							
	W	P205	0.03	0.04	53.65						
	W	SI02	0.22	0.13							
	W	RB20	0.18	0.14							
	W	CS20	0.37	1.02							
	W	SRO	0.34	0.34							
	W	Y203	1.28	2.81							
	W	AG20	0.09	0.19							

WASTE STUDIES---CRNL

NCTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
473					900.	27.07			2.	2.72	7
	A	LI20	20.14	5.94			H3P04	3.5			
	A	NA20	20.14	12.32			NAOH	1.9			
	A	CA0	4.15	2.30			LI OH-H2O	1.9			
	A	P205	37.37	52.37			H3B03	2.0			
	W	NA20	1.43	0.88	13.20						
	W	BA0	0.40	0.61							
	W	NIO	0.10	0.08							
	W	AL203	0.01	0.01							
	W	FE203	9.65	15.22							
	W	CR203	0.12	0.19							
	W	ZR02	1.35	1.64							
	W	RU02	1.18	1.54							
	W	MO03	1.64	2.33							
	W	P205	0.03	0.04	52.41						
	W	SI02	0.21	0.12							
	W	RB20	0.37	0.14							
	W	CS20	0.36	1.00							
	W	SRO	0.32	0.33							
	W	Y203	1.23	2.74							
	W	AG20	0.08	0.19							
474					850.	26.76			2.	2.72	7
	A	LI20	19.73	5.87			H3P04	3.5			
	A	NA20	19.73	12.18			NAOH	1.9			
	A	CA0	6.10	3.41			LI OH-H2O	1.9			
	A	P205	36.61	51.77			H3B03	2.30			
	W	NA20	1.40	0.87	13.05						
	W	BA0	0.40	0.61							
	W	NIO	0.10	0.08							
	W	AL203	0.01	0.01							
	W	FE203	9.46	15.05							
	W	CR203	0.12	0.18							
	W	ZR02	1.32	1.62							
	W	RU02	1.15	1.53							
	W	MO03	1.61	2.30							
	W	P205	0.03	0.04	51.82						
	W	SI02	0.20	0.12							
	W	RB20	0.37	0.14							
	W	CS20	0.35	0.99							
	W	SRO	0.32	0.33							
	W	Y203	1.21	2.71							
	W	AG20	0.08	0.19							
475					900.	25.54			3.	2.69	7
	A	LI20	21.67	6.36			H3P04	4.0			
	A	NA20	21.67	13.19			NAOH	2.2			
	A	P205	39.39	54.91			LI OH-H2O	2.2			
	W	NA20	1.36	0.83	14.01						
	W	BA0	0.38	0.58							
	W	NIO	0.10	0.07							
	W	AL203	0.01	0.01							
	W	FE203	9.16	14.36							
	W	CR203	0.12	0.18							
	W	ZR02	1.28	1.55							
	W	RU02	1.11	1.46							
	W	MO03	1.56	2.20							
	W	P205	0.03	0.04	54.95						
	W	SI02	0.20	0.12							
	W	RB20	0.37	0.13							
	W	CS20	0.34	0.94							
	W	SRO	0.31	0.31							
	W	Y203	1.17	2.59							
	W	AG20	0.08	0.18							
476					850.	25.00			3.	2.69	7
	A	LI20	20.85	6.22			H3P04	4.0			
	A	NA20	20.85	12.91			NAOH	2.2			
	A	CA0	3.79	2.12			LI OH-H2O	2.2			
	A	P205	37.90	53.75			H3B03	2.0			
	W	NA20	1.31	0.81	13.72						
	W	BA0	0.37	0.57							
	W	NIO	0.09	0.07							
	W	AL203	0.01	0.01							
	W	FE203	8.81	14.06							
	W	CR203	0.11	0.17							
	W	ZR02	1.23	1.52							
	W	RU02	1.37	1.43							
	W	MO03	1.50	2.15							
	W	P205	0.03	0.04	53.79						
	W	SI02	0.19	0.11							
	W	RB20	0.07	0.13							
	W	CS20	0.33	0.92							
	W	SRO	0.29	0.30							
	W	Y203	1.12	2.54							
	W	AG20	0.08	0.18							

WASTE STUDIES---ORNL

NOTE---UNDER COLUMN I, A MEANS ADDITIVE, AND W MEANS WASTE. T IS IN DEGREES CENTIGRADE.

MELT NO.	I	COMP.	MOLE %	WT. %	OPER. T.	WT. % WO	ADDITIVES	CONC. M/L	APP.	CALC. PORE FREE D.	WASTE TYPE
477					850.	24.48			2.	2.69	7
	A	Li2O	20.08	6.09			H3PO4	4.0			
	A	Na2O	20.08	12.64			NaOH	2.2			
	A	CaO	7.30	4.16			LiOH-H2O	2.2			
	A	P2O5	36.52	52.63			H3BO3	.40			
	W	Na2O	1.26	21.34	0.79	13.43					
	W	BAO	0.36	0.55							
	W	NiO	0.09	0.07							
	W	AL2O3	0.01	0.01							
	W	FE2O3	8.49	13.77							
	W	CR2O3	0.11	0.17							
	W	ZRO2	1.19	1.48							
	W	RUO2	1.03	1.40							
	W	PCO3	1.44	2.11							
	W	P2O5	0.05	36.55	0.04	52.67					
	W	SiO2	0.18	0.11							
	W	RB2O	0.07	0.12							
	W	CS2O	0.32	0.90							
	W	SRO	0.28	3.30							
	W	Y2O3	1.08	2.48							
	W	AG2O	0.07	0.17							

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