TID/SNA -- 2059

Metallography of
AISI 347 Sheet
(.016")

Creep Tested in $G\dot{H}_2$
at
Battelle

MASTER

Anamet Laboratories, Inc.
BERKELEY, CALIFORNIA

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ANALYTICAL
CHEMICAL
METALLURGICALHIGH TEMPERATURE
APPLIED RESEARCH
PHYSICAL TESTING

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REPORT TO:

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Photomicrographs from sixteen type 347 stainless steel flat (0.016" thick) creep rupture specimens are presented in Figure 1 through Figure 16.

Respectfully submitted,

ANAMET LABORATORIES, INC.

By 3c
mlt**NOTICE**

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(a) transverse 100X

(b) transverse 500X

Fig. 1 Specimen A-11. 1200°F, 27 ksi, 34.9 hrs. (ruptured)
Grain size = 13.5

(c)

longitudinal

100X

(d)

longitudinal

500X

Fig. 1 Specimen A-11. 1200°F, 27 ksi, 34.9 hrs. (ruptured)

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 2 Specimen A-1 1200°F, 24 ksi, 42.5 hrs. (discontinued)
Grain size = 13.5

(a) transverse 100X

(b) transverse 500X

Fig. 3 Specimen A-12. 1400°F, 10 ksi, 23.5 hrs. (ruptured)
Grain size = 13.5

(c)

100X

(d)

500X

(e)

500X

Fig. 3 Specimen A-12. 1400°F, 10 ksi, 23.5 hrs. (ruptured)

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 4 Specimen A-4. 1400°F, 5 ksi, 60.7 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 500X

(b) transverse 500X

(d) longitudinal 500X

Fig. 5 Specimen A-8. 1400°F, 3.1 ksi, 117.4 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 6 Specimen A-10. 1400°F, 0.95 ksi, 114.0 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 7 Specimen A-2. 1400°F, 7 ksi, 22.6 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 8 Specimen B-4. 1400°F, 7 ksi, 54 hrs. (discontinued)

Grain size = 8-13

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 9 Specimen C-1. 1400°F, 7 ksi, 50.3 hrs. (discontinued)

Grain size = 7-13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 10 Specimen A-13. 1600°F, 3 ksi, 5.6 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 11 Specimen B-3. 1600°F, 3 ksi, 10.5 hrs. (discontinued)

Grain size = 8-13

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 12 Specimen C-3. 1600°F, 3 ksi, 9.0 hrs. (discontinued)

Grain size = 8-13

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 13 Specimen A-15. 1600°F, 1.0 ksi, 33.7 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 14 Specimen C-5. 1600°F, 1.0 ksi, 117.5 hrs. (discontinued)

Grain size = 7-13

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 15 Specimen A-16. 1600°F, 0.5 ksi, 141.1 hrs. (discontinued)

Grain size = 13.5

(a) transverse 100X

(c) longitudinal 100X

(b) transverse 500X

(d) longitudinal 500X

Fig. 16 Specimen C-4. 1600°F, 0.5 ksi, 160 hrs. (discontinued)

Grain size = 7-13