

Micrograph Center Submission Guidelines

March 2004

ASM is developing an on-line submission system to provide you with a way to upload image files and information about them using the Internet.

Until that system is in place, we want to make it as easy as possible for you publish in the Micrograph Center.

To submit your contribution via email, for instructions on using file transfer protocol (FTP), or for any questions please contact micrograph@asminternational.org or phone 440-338-5151 ext 5539. Note that all submissions will undergo peer review before being accepted for publication. We look forward to hearing from you!

Submissions on CD or any combination of photographs, hard copy, and files should be mailed to:

Fran Cverna
Center for Materials Data
ASM International
Materials Park OH 44073 USA

Section I. Copyright Transfer/Permission

The form found in Appendix A must be completed, signed and returned to ASM. Fax or electronic signature is acceptable.

Section II. Image File Guidelines

- Each image must be submitted as a separate file (one image per file). Micrographs images embedded in application files such as Microsoft Word or PowerPoint are **not** acceptable.
- Each digital (electronic) submission must have a scale bar on the image.
- Embedded arrows pointing out pertinent microstructures are encouraged (explanation must be provided in the image description).
- Preferred file formats:
 - o Format: tiff or png
 - o Color depth: black and white 8 bit; true color 24 bit
 - o Resolution: 300 ppi minimum
 - o Width: 2 inches (600 pixels) minimum (5 inches (1500 pixels) preferred)
 - o Height: 2 inches (600 pixels) minimum (3 inches (900 pixels) preferred)
 - o Total number of pixels 360,000 minimum (1,350,000 or greater preferred)

All non-proprietary image file formats and resolutions as low as 100 ppi will be considered. Please submit best (highest quality) master file available.

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Section III. Description Information Requirement

Information may be provided in a variety of ways. The completeness of information will be evaluated individually for each image. If you have your information stored in hard copy only, a photocopy of the information you have is acceptable. If you have your information stored electronically, acceptable file types include txt, doc, xls, and mdb. For a Microsoft Excel spreadsheet that lists the information items that may accompany a micrograph, or for any questions you might have, contact micrograph@asminternational.org.

* Required information

Information about each contributor (examples are given in parentheses):

*Title and name (*Dr. John A. Smith*)

Affiliation, company, organization, or university (*ASM International*) (continued)

*Address (*9639 Kinsman Road
Materials Park OH 44073*)

Phone (*440 338-5151*)

*E-mail (*micrograph@asminternational.org*)

*OK to publish link to email? (*Y/N; your email address will not appear, but subscribers will be able to send you email*)

Alternate e-mail to publish (micrograph2@asminternational.org)

Internet address or url (www.asmiinternational.org)

OK to publish live link to internet address (*Y/N*)

Additional credits (*Courtesy of members*)

Submit date (*3/25/2004*)

Information about each micrograph (examples are given in parentheses):

Date of image if known (*12/14/1998*)

*Photographic method (*Light microscopy*) (*SEM*)

Microscope, illumination, or contrast details (*Polarized light*) (*HREM*)

*Original magnification (*100x*) (*500x*)

*Etchant (*Picril*) (*2 mL HF, 8 mL HNO₃, and 90 mL H₂O*) (*3% nital*)

Sample (*Representative area of core*) (*Longitudinal*)

Sample preparation (*Comparatively light etch*)

Series (*Y/N*)

Series title (*Deformation effects in ferrite in carbon steels*)

Order in series (*1 of 6*)

Material group (*Aluminum*) (*Cast iron*)

*Material name (*2014*) (*Ductile iron*) (*A-286*)

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Information about each micrograph(examples in parentheses)

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| | |
|--------------------------------|--|
| Alternate material names | (<i>cartridge brass</i>) |
| UNS number | (<i>S30400</i>) |
| Composition | (<i>Fe-3.61C-1.94Si-0.19Mn-1.41Ni-0.17Mo</i> (<i>1.18 C; 0.19 Si; 0.25 Mn (wt%)</i>)) |
| *Condition | (<i>Annealed</i>) (<i>Hardened</i>) |
| Condition details | (<i>Austenitized at 850 deg C (1560 deg F), quenched in water,</i> <i>tempered at 650 deg C (1200 deg F) for 4 h</i>) |
| *Product form | (<i>Bar</i>) (<i>Sheet</i>) |
| Product details | (<i>Butt weld in 50 mm thick plate</i>) |
| Service history | (<i>In service one year at 480 deg C (900 deg F) in a refinery</i> <i>vessel</i>) |
| Properties | (<i>Hardness 305 HV</i>) |
| *File name or photo identifier | (<i>xxyyy.jpg</i>) (<i>112.2</i>) (continued) |
| *Description | (<i>approximately 200 words max</i>) (<i>Transformation characteristics after partial austenitization. Images 1 to 4 illustrate the transformation after austenitizing at 730 deg C (1345 deg F) (just above the A1 temperature) of material of normal initial austenitic grain size. At a transformation temperature of 500 deg C (930 deg F) (image 4), virtually no new grain-boundary allotriomorphs form. The islands of ferrite present are the original islands of undissolved ferrite on which a further small volume fraction of ferrite has grown.</i>) (<i>The structure is predominantly pearlite (light and dark gray) with thin films of carbide (black lines) outlining the prior-austenite grain boundaries.</i>) (<i>Etched, higher magnification image of as cast oxygen blown copper. The majority of the structure is pure copper. Oxygen remains in the structure as cuprous oxide (Cu₂O). The dendritic structure is typical of cast metals. A lower melting point mixture of pure copper and Cu₂O, called a eutectic, forms in the open spaces between the dendrites. The eutectic particles are usually dark, globular bodies dispersed in a copper background. The Cu₂O particles form a network, outlining the dendritic cells. Pores, seen as dark spots in the microstructure, are also present in the as-cast material.</i>) |

