



DIRECTIVE NUMBER: 9443.01(81)

TITLE: Sufficient Agitation for the Extraction Procedure
Toxicity Test

APPROVAL DATE: 6-17-81

EFFECTIVE DATE: 6-17-81

ORIGINATING OFFICE: Office of Solid Waste

☒ **FINAL**

☐ **DRAFT**

LEVEL OF DRAFT

☐ A — Signed by AA or DAA

☐ B — Signed by Office Director

☐ C — Review & Comment

REFERENCE (other documents):

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Key Words: EP Toxicity Test Procedure

Regulations: 40 CFR 261.24

Subject: Sufficient Agitation for the Extraction Procedure Toxicity Test

Addressee: M.J. Boris, American Steel Foundries

Originator: David Friedman, Manager, Waste Analysis Program,
Hazardous and Industrial Waste Division

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Summary:

To meet the definition of acceptable agitation, the extraction must impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid, but also to insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid. A test procedure in which the container is handshaken twice daily by inverting it 15 times is not an acceptable agitation. This method is deficient in that during the 12 hours or more that the sample remains undisturbed, stratification is likely to take place. A magnetic stirrer method may be used if, after the application of the Structural Integrity Procedure, the waste material is a monolithic piece. By suspending the sample in a continuously stirred bath of extraction fluid, the objectives described above will be met.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460
OFFICE OF SOLID WASTE

JUN 17 1981

OFFICE OF WATER
AND WASTE MANAGEMENT

Mr. M. J. Boris
American Steel Foundries
3761 Canal Street
East Chicago, IN 46312

Dear Mr. Boris:

I am writing in response to your letter of May 11, 1981 requesting a ruling on whether the American Foundrymen's Society (AFS) Standard Test Procedure in which the container is handshaken twice daily by inverting it 15 times is an acceptable agitation procedure to employ when conducting the Extraction Procedure toxicity test [40 CFR 261.24].

The AFS method is not acceptable since it does not meet the definition of acceptable agitation; "...an acceptable extractor is one which will impart sufficient agitation to the mixture to not only prevent stratification of the sample and extraction fluid but also insure that all sample surfaces are continuously brought into contact with well mixed extraction fluid". Specifically the AFS method is deficient in that during the 12 hours or more that the sample remains undisturbed, stratification is likely to take place.

The magnetic stirrer method you also asked about may however be used if, after application of the Structural Integrity Procedure, the waste material is a monolithic piece. By suspending the sample in a continuously stirred bath of extraction fluid, the objectives described in the aforementioned specification will be met.

I hope that this answers your question. If you have any additional questions, please feel free to give me a call at (202) 755-9187.

Sincerely,

A handwritten signature in cursive script that reads "David Friedman".

David Friedman
Manager, Waste Analysis Program
Hazardous and Industrial Waste Division (WH-565)