

INTEROFFICE CORRESPONDENCE

From: Mike Kear
Koch
(Dole Jones)
Safely also

SUBJECT: UPDATED ASBESTOS QUICK TEST

DATE: December 18, 1979

OFFICE: Radnor

FROM: J. M. Haas

TO:

J. R. Blackerby	-	Duncan
F. J. Cebula	-	Marcus Hook
K. E. Eaton	-	Tulsa
R. Figueroa	-	Yabucoa
R. E. Hammitt	-	Dallas
B. Hatfield	-	Sarnia
C. Milburn	-	Corpus Christi
G. W. Reed	-	Toledo
Andy Becker	-	Chester
Doyle Stegall	-	Dallas

The NIOSH procedure for asbestos determination has been updated. Please take this copy to your assigned chemist and mark old copy "outdated."

Call with any questions.

Don

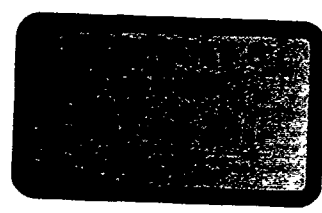
JMH:dhs 2/6
Attachment

cc: D. Camin - Marcus Hook

11-18-79 *Kear*

11-18-79

11-18-79



TEST FOR SCREENING ASBESTOS

WALTER S. KIM
JAMES W. CARTER, II
RICHARD E. KUPEL

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
DIVISION OF PHYSICAL SCIENCES AND ENGINEERING
CINCINNATI, OHIO 45226

OCTOBER 1979

A 0001461

TEST FOR SCREENING ASBESTOS

I. SCOPE AND APPLICATION

This colorimetric test is applicable to the detection of magnesium (II) and iron (II) from asbestos in bulk samples. These samples include sprayed on asbestos as well as ceiling tiles. The test is simple and can be readily used in the field to screen for the presence or absence of asbestos. The amount of the sample needed for the test is only about the size of a large pea.

II. PRINCIPLE

The test is based upon the formation of color complexes with Mg^{+2} and Fe^{+2} released from asbestos. The Mg^{+2} from chrysotile is complexed with p-nitrophenylazo- α -naphthol. The Fe^{+2} from crocidolite and amosite is complexed with 1, 10-phenanthroline. A positive test is indicated by the formation of colored complex for Mg^{+2} and/or Fe^{+2} , and it indicates possible presence of asbestos.

III. INTERFERENCES

The test is a colorimetric spot test for Mg^{+2} and Fe^{+2} , and is not specific for asbestos.

A bulk sample may contain Mg and Fe compounds other than asbestos. Without treating the sample as in the Procedure, a few drops of color-forming reagents are added directly to the sample. If either color forms, an interfering substance is present and the sample must be cleaned before the test is conducted to eliminate the interference. In this cleaning process, plaster, mineral wool, fiberglass, and soluble Mg and Fe compounds are removed before the screening test, preventing their interference.

IV. SENSITIVITY, PRECISION, AND ACCURACY

A sample containing more than 1% asbestos gives a positive color reaction.

A total of 198 various field samples were tested before the Acid Wash steps were added to the Iron Test procedure. Results are listed below:

Results of the screening test without the Acid Wash.

	True Positive	False Positive	True Negative	False Negative
No. of Samples	79	50	69	0
% of Total	40	25	35	0

With the Acid Wash, the following results were obtained from 13 samples.

Results of the screening test with the Acid Wash.

	True Positive	False Positive	True Negative	False Negative
No. of Samples	5	0	8	0
% of Total	38	0	62	0

V. APPARATUS

1. Teflon dish or white plastic plate
2. Plastic or glass rod
3. Dropping plastic pipet
4. 15 mL disposable plastic beaker
5. 25 mm size 0.8 μ m mixed cellulose ester filter
6. 25 mm size polyvinyl chloride filter
7. 25 mm Svinnex filter holder and gasket
8. 10 mL disposable plastic syringe

VI. REAGENTS (Reagent Grade)

1. Phosphoric acid, concentrated.
2. 10 N sodium hydroxide - Dissolve 40 g of NaOH in 100 mL of water.
3. Mg Reagent - Dissolve 1 mg of p-nitrophenylazo- α -naphthol in 100 mL of 2 N NaOH. Age at least a day. This reagent is stable over a month.
4. Hydrofluoric acid - Dilute 20 mL of HF with 20 mL of water. Add 0.6 mL of concentrated HCl.
5. Fe Reagent - Dissolve 2 g of 1,10-phenanthroline in 50 mL of ethanol. This reagent is stable over a month.
6. Glycerin, reagent grade.
7. Acetic acid, concentrated glacial.
8. Sulfuric acid, concentrated.
9. Double de-ionized water.

VII. PROCEDURE

A. Magnesium Test

1. Add a few drops of Mg Reagent directly to the sample. If blue color appears, wash the sample with glycerin before the test. Any sample containing plaster is also washed with glycerin.

Glycerin Wash

- a. Place a small portion of sample, about the size of a large pea, in a plastic beaker.
 - b. Add 5 drops of glycerin and mix well with a plastic rod or spatula.
 - c. Rinse the plastic rod with a small amount of water into the beaker.
 - d. Filter the sample through the filtration assembly consisting of a syringe attached to the Swinnex filter holder loaded with a mixed cellulose ester filter and a gasket.
 - e. Filter with a minimum of 5 washings or about 50 mL of water.
 - f. Transfer the filter to a Teflon dish for the Magnesium test.
2. Add a drop of H_3PO_4 and mix well by grinding the sample with a plastic rod.
 3. Add 2 drops of 10 N NaOH and mix well.
 4. Add 5 drops of Mg Reagent and stir briefly. Note any color change.
 5. Add 5 more drops of Mg Reagent and observe the final color.
 6. A blue color indicates that chrysotile may be present.
 7. Samples giving a positive test may be sent to a laboratory for confirmation. If the magnesium test is negative, the sample must be tested for iron.

B. Iron Test

1. Add few drops of Fe Reagent directly to the sample. If a red color appears, wash the sample with the acetic--sulfuric acid mixture before the test. Samples containing fiberglass or mineral wool are also washed with the acid mixture.

Acid Wash

1. Place a small portion of the sample, about the size of a large pea, in a plastic beaker.
 2. Add 5 drops of concentrated acetic acid.
 3. Add 5 drops of concentrated sulfuric acid.
 4. Mix well and ultrasonicate if available for 5 minutes.
 5. Filter the sample through a polyvinyl chloride filter with a minimum of 5 washings or about 50 mL of water.
 6. Transfer the filter to a Teflon dish and proceed with the Iron Test.
2. Add a drop of HF solution and mix well.
 3. Add 5 drops of Fe Reagent and observe the development of red color.
 4. The red color indicates that amosite or crocidolite may be present.

C. Notes

If both parts of the test give negative responses, there is a low probability that any asbestos is present. Once the presence of magnesium and/or iron is indicated, further analysis, if needed, is done in the laboratory to confirm, identify the type, and quantitate the percentage of asbestos.

VIII. REFERENCE

1. Caution: Asbestos Dust. A scriptographic booklet by Channing L. Bete Co., Inc., Greenfield, Mass. Prepared in cooperation with U.S. DHEW, PHS, CDC, National Institute for Occupational Safety and Health, Cincinnati, Ohio (1973).
2. Fritz Feigl: Spot Tests - In Inorganic Analysis. Translated by Ralph E. Oesper. 5th Edition. Elsevier Publishing Company, Amsterdam. (1958) p. 225-227.
3. Walter S. Kim, James W. Carter, II, and Richard E. Kupel: Quick Screening Test for Asbestos. U.S. DHEW, PHS, CDC, NIOSH, Cincinnati, Ohio. To be published in AIAAJ.



Find Out Fast If It's Asbestos

Whenever there are many sites to survey for asbestos, save time and money with the E-C Asbestest™ asbestos detection kit.

Many industrial hygienists at refineries and chemical plants use it for inexpensive "go/no go" testing. More expensive laboratory tests may be eliminated with the Asbestest™ which uses standard colorimetric procedures to detect asbestos-bound iron and/or magnesium. It is sensitive to as little as 1% asbestos with no false negatives for either serpentine or amphibole material.

E-C Asbestest Kit contains enough materials for 55 tests. Nothing else is needed. Typical tests can be run in 5 minutes. EC110 Asbestest Kit ... \$125 f.o.b. St. Petersburg, FL.

For information, call Technical Service toll free 1-800-624-2232 (in Florida, 1-800-282-7932).

E-C Apparatus Corporation, 3831 Tyrone Blvd. N., St. Petersburg, FL 33709, 813-344-1644. Telex 51-4736 HALA



A 0001468

Called 4-18-85 Theirs is basically same as ours.

Circle 99 on Reader Service Card

They wash 50 cc same



INTER-OFFICE CORRESPONDENCE

*File
Rollins
Waste
Disposal*

TO: Pete Horseman

FORT WORTH, TEXAS

FROM: Joe F. Gay

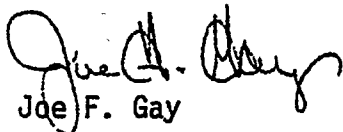
DATE: April 21, 1980

SUBJECT: Rollins Environmental Services, Inc.

I have reviewed the contract proposed by Rollins and do not have any objection except that the term "to the best of its knowledge" should be inserted into the first sentence of Paragraph 13. The sentence would then read "13. OSHA. Company represents and warrants that to the best of its knowledge Waste does not contain the following substances in concentrations greater than those specified below:".

I have discussed the addition of this part of the contract with Davis Scharff and he assured me that he has no objection to it being included. Obviously it will require some testing, but Davis feels that this testing would have been required anyway.

I would request that you discuss with Brack Routh the requirement regarding asbestos. As you are aware, Brack is responsible for insuring that adequate precautions are taken by Champlin personnel when they handle, package and label asbestos material in the refinery.


Joe F. Gay

JFG/od

cc: C. J. Hoffman
R. J. Light
B. D. Routh
D. Scharff

A 0061590

TEXAS ECOLOGISTS, INC.

ROBSTOWN, TEXAS

WS# 0,9 — 0,0,0 — 1,2,6

REQUEST FOR DISPOSAL

Please refer to the separate detailed instructions while completing this form. Each item on the form must be filled in with the exception of the shaded areas, which are for TECO use only. If an item is not applicable, place "N/A" in the space provided for that item. (If lab analysis was performed please attach a signed copy.)

GENERAL INFORMATION

USEPA GENERATOR ID NUMBER

T X D 0,5 — 1,1,6 — 1,9,9

GENERATOR NAME

C H A M P L I N , P E T R O L E U M , C O

GENERATING
FACILITY
ADDRESS

P . O . , B O X , 9 1 , 7 , 6 ,

1 , 8 , 0 , 1 , N U E C E S , B A Y , B L V D ,

CITY

C O R P U S , C H R I S T I ,

STATE

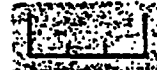
T X

ZIP CODE

7 8 4 6 1 9 -

COUNTY

N U E C E S ,



STATE EPA GENERATOR ID NUMBER

30532

STATE WS#

179350

ADMINISTRATIVE CONTACT

D A V I S , S C H A R F F ,

TELEPHONE A/C

5,1,2 - 8,8,2 - 8,8,7,1

Ext.

3,1,4

GENERATOR
TECHNICAL CONTACT

R I C H A R D , C A M P B E L L ,

TELEPHONE A/C

5,1,2 - 8,8,2 - 8,8,7,1

Ext.

4,4,4

WASTE HAULER

T E X A S , E C O L O G I S T S ,

ADDRESS

P.O. Box 307 Robstown, Texas 78380

WASTE STREAM NAME

A S B E S T O S

PROCESS GENERATING WASTE

A S B E S T O S , I N S U L A T E D , E Q U I P M E N T

A 0065002

RETURN COMPLETED FORM TO:

P.O. BOX 7246

LOUISVILLE, KY 40207

Phone: 502-426-7160

CUSTOMER #

DATE RECEIVED

SAMPLING INFORMATION

DATE SAMPLE TAKEN

____/____/____

PERSON SAMPLING

TITLE

TELEPHONE

A/C

____-____-____

Ext.

SAMPLE TYPE:

- ☐ (1) GRAB
☐ (2) COMPOSITE OF MORE THAN ONE SAMPLE
☐ (3) 24-HOUR COMPOSITE
☐ (4) IN-DEPTH SAMPLE
☐ (5) SPLIT SAMPLE
☐ (6) DUPLICATE SAMPLE
☐ (7) OTHER _____

COMMENTS

LAB NAME

DATE OF ANALYSIS

____/____/____

EPA HAZARDOUS WASTE CODES

(40 CFR 261.30-261.33)



Check if waste is not hazardous per RCRA

____	____	____	____	____
____	____	____	____	____
____	____	____	____	____



Check if additional EPA hazardous waste numbers are attached

A 0065003

____-____-____

WASTE DESCRIPTION

WASTE COMPOSITION

Check the one box that best describes the waste stream.

- ☐ (1) ORGANIC
☒ (2) INORGANIC
☐ (3) BOTH ORGANIC & INORGANIC

APPEARANCE

Check the one box and indicate the number of layers (phases) that best describes the waste stream.

- ☐ (1) FREE FLOWING LIQUID
☐ (2) RESINOUS LIQUID
☐ (3) OILY LIQUID
☐ (4) VISCOUS LIQUID
☐ (5) SLUDGE
☐ (6) POWDERY
☐ (7) GRANULAR
☒ (8) SOLID
Number of layers _____

COLOR

Check the one box that best describes the waste stream.

- ☐ (1) RED
☐ (2) BLUE
☐ (3) YELLOW
☐ (4) GREEN
☐ (5) BLACK
☐ (6) CLEAR
☐ (7) BROWN
☒ (8) MILKY WHITE
☐ (9) PURPLE
☐ (10) ORANGE

ODOR

Check the one box that best describes the waste stream.

- ☐ (1) SWEET
☐ (2) SOUR
☐ (3) PUNGENT
☐ (4) BACTERIOLOGICAL
☐ (5) ETHER-LIKE
☐ (6) ALCOHOL-LIKE
☐ (7) AROMATIC
☐ (8) SOLVENT-LIKE
☒ (9) NONE

SETTLABLE SOLIDS —
Required for disposal of liquids.

PERCENT LIQUID

VISCOSITY (Centipoise)

BOILING POINT

DENSITY

Numerical Value
Mandatory

- ☐ (1) lbs/gallon (LIQUIDS)
☒ (2) lbs/cu. ft. (SOLIDS)

SAMPLE	RANGE	
	LOW	HIGH
Settleable Solids (ml/l)		
Percent Liquid (%)		
Viscosity (Centipoise)		
Boiling Point (°F)		
Density (lbs/cu. ft.)	1.5	2.0

WASTE PROPERTIES

IGNITABILITY (40 CFR 261.21)

SAMPLE	RANGE	
	LOW	HIGH
Flashpoint (°F)	99	

ANALYTICAL TECHNIQUE _____

Does Material Ignite When Exposed To:

AIR? ☐ (1) Yes ☒ (2) No WATER? ☐ (1) Yes ☒ (2) No FRICTION? ☐ (1) Yes ☒ (2) No

If yes, explain _____

A 0065004

_____-_____-_____-

REACTIVITY (40 CFR 261.23)

CYANIDE AS CN^- TOTAL % BY WEIGHT

SULFIDE AS S⁻ TOTAL % BY WEIGHT

ANALYTICAL TECHNIQUE

Does the waste contain any of the following?

1. A solid form of nitrate/nitrite ☐ (1) Yes ☒ (2) No

2. A precipitate of nitrate/nitrite ☐ (1) Yes ☒ (2) No

Is waste reactive with water to cause splattering or gas release? ☐ (1) Yes ☒ (2) No

If yes, describe reaction

CORROSIVITY (40 CFR 281.22)

Complete either pH for inorganics, or the corrosion rate test for organics. For solids, use the 1% solution test described in the instructions.

PH	SAMPLE	RANGE	
		LOW	HIGH
	9.9.9	-	-

Alkalinity
(for pH greater
than 9)

mg/l as calcium carbonate

3 Acidity
1 & or pH less
than 5)

mg/l as calcium carbonate

CORROSION RATE TEST

The diagram illustrates the relationship between sample size, range, and standard deviation. It consists of three main components: a 'SAMPLE' on the left, a 'RANGE' in the middle, and a 'HIGH' value on the right. The 'SAMPLE' is represented by a horizontal line with a central dot (mean) and two vertical lines (standard deviation). Below it is a label 'mm/yr'. The 'RANGE' is represented by a horizontal line with 'LOW' and 'HIGH' labels. A minus sign is placed between the 'RANGE' and the 'HIGH' value. A horizontal line connects the 'SAMPLE' mean to the 'RANGE' line, with a minus sign indicating the difference.

TOXICITY (40 CFR 261.24)

LEACHATE -
mg/l

LEACHATE -
mg/l

LEACHATE —
mg/l

LEAD

CHROMIUM

ENDRIN

MERCURY

ARSENIC

LINDANE¹

CYANIDE

SELENIUM

METHOXYCHLOR

BARIUM

SILVER

TOXAPHENE

CADMIUM

2.4-D

2,4,5-TP SILVEX

COMPONENTS

Specific chemical names of components are required. DO NOT use generic names. Account for 100% of the components.

	SAMPLE	PERCENT RANGE	
		LOW	HIGH
A S B E S T O S	1 0 0 9	1 0 0	- 1 0

☐ CHECK IF ADDITIONAL COMPONENT DESCRIPTIONS ARE ATTACHED

ANALYTICAL TECHNIQUE _____

Does this waste stream contain biologic materials, pathogens, or etiological agents:

☐ (1) Yes ☒ (2) No

SHIPPING INFORMATION

ANTICIPATED ANNUAL VOLUME

2 0

- ☐ (1) GALLONS (LIQUIDS)
☒ (2) CU. FT. (SOLIDS)

Anticipated Transport Frequency

- ☐ 1. DAILY
☐ 2. WEEKLY
☐ 3. BI-WEEKLY
☐ 4. MONTHLY
☐ 5. QUARTERLY
☐ 6. SEMI-ANNUALLY
☒ 7. ANNUALLY
☐ 8. ONE TIME

A 0065006