



DOW CHEMICAL U.S.A.

Circ
204
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B-101 Building
PH. 2467

TEXAS OPERATIONS
FREEPORT, TEXAS 77541

RECEIVED

JAN 20 1987

J. L. SETH

January 15, 1987

Safety Directors

ASBESTOS STANDARD

These are the slides Randy Johnson presented to the Maintenance Superintendents. It summarizes where we are today relative to compliance with the standard.

We need to support the maintenance folks as we implement this "significant change."

This information needs to be communicated to our operating personnel. How and who does that will vary, but our problem right now is one of communication. Would you work with your line function folks to communicate the changes.

Darrell

Darrell Worman
Safety Director

js

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810408400

PLAINTIFF'S EXHIBIT

DOW-2461

AN OPERATING UNIT OF THE DOW CHEMICAL COMPANY

**Quality
Performance**
Means More At Dow

ST0408400

XC SID'S

ASBESTOS STANDARD
REVISION ORIENTATION

ST0408401

1/14/87

ST0408401

ASBESTOS EXPOSURE REVISION
EFFECTIVE 1/16/87

	OLD	NEW
8 HR TWA LIMIT	2 F/CC	.2 F/CC
8 HR TWA ACTION LEVEL	1 F/CC	.1 F/CC

ASBESTOS EXPOSURE HAZARD

ASBESTOSIS - A LUNG DISEASE

ASSOCIATED WITH LUNG CANCER

SMOKING GREATLY INCREASES RISK

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1/13/87

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TO COMPLY WITH THE LAW

MONITORING ON JOBS NOT PREVIOUSLY CONSIDERED A PROBLEM

ADDITIONAL TRAINING

MORE USE OF RESPIRATORS

CLEAN-UP WITH HEPA VACUUMS ONLY

INCREASED PERSONAL HYGIENE/PROTECTIVE EQUIPMENT

CARTRIDGE RESPIRATOR VS. PAPER MASK

USE OF GLOVE BAGS ON MORE JOBS

SIX MONTHS FIT TEST ON RESPIRATORS

POWERED AIR RESPIRATORS AVAILABLE

BREATHING AIR OR MONITORING ON JOBS WHERE NO DATA EXISTS

LARGE JOB - SMALL JOB DIFFERENCES

LABELING OF ASBESTOS AREAS

ROPED OFF ACCESS (REGULATED AREA) IF CONCENTRATIONS AT
.2 F/CC OR GREATER

NO EATING, DRINKING, SMOKING, CHEWING TOBACCO/GUM, OR
APPLYING COSMETICS IN REGULATED AREAS

SPECIAL CONSIDERATIONS ON LARGE SCALE JOBS

INCREASED EMPHASIS ON CLEAN-UP

REVISED DISPOSAL PROCEDURES

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DEFINITION OF SMALL-SCALE, SHORT-DURATION ACTIVITIES

SMALL-SCALE, SHORT-DURATION RENOVATION AND MAINTENANCE ACTIVITIES ARE TASKS SUCH AS, BUT NOT LIMITED TO:

- . REMOVAL OF ASBESTOS-CONTAINING INSULATION ON PIPES
- . REMOVAL OF SMALL QUANTITIES OF ASBESTOS-CONTAINING INSULATION ON BEAMS OR ABOVE CEILINGS
- . REPLACEMENT OF AN ASBESTOS-CONTAINING GASKET ON A VALVE
- . INSTALLATION OR REMOVAL OF A SMALL SECTION OF DRYWALL
- . INSTALLATION OF ELECTRICAL CONDUITS THROUGH OR PROXIMATE TO ASBESTOS-CONTAINING MATERIALS.

1/14/87

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APPLICATION ON TYPICAL MAINTENANCE JOBS

A. *JOBS WITH LIMITED DATA SHOWING LOW EXPOSURE (<0.1)

RECEIVING NEW GASKETS INTO WAREHOUSE
STORING GASKETS IN WAREHOUSES
MOVING NEW GASKETS TO JOB SITE
INSTALLING NEW GASKETS ON PRE-CLEANED FLANGES
REMOVING OLD GASKETS THAT DO NOT REQUIRE SCRAPING
DISPOSING OF OLD GASKETS

THESE JOBS WILL BE DONE AS THEY HAVE BEEN DONE IN THE
PAST EXCEPT DISPOSAL WILL BE TO AN ASBESTOS DISPOSAL
CONTAINER (ADDITIONAL MONITORING WILL BE DONE).

*THIS APPLIES TO PACKING AS WELL.

B. JOBS WITH INADEQUATE DATA TO CLASSIFY - CONSIDER A PROBLEM
UNTIL PROVEN OTHERWISE.

ROLLER, RAZOR, OR KNIFE CUTTING OF GASKETS OR PACKING
SCRAPING OF STUCK GASKETS
INSULATION REMOVAL
DIFFICULT PACKING REMOVAL
GRINDING OR BUFFING TO CLEAN GASKET SURFACES

ON THESE JOBS USE THE GLOVE BAG PROCEDURE OR SMALL SCALE
PROCEDURE UNTIL DATA AND METHODS ARE CLARIFIED.

C. JOBS NOT TO BE DONE

JIG SAW CUTTING OF GASKETS
DRILLING OF GASKETS OR OTHER ASBESTOS CONTAINING MATERIAL
WITHOUT LOCAL EXHAUST VENT DRILL

USE OF COMPRESSED AIR FOR ASBESTOS CLEANING

DRY SWEEPING OF ASBESTOS SCRAP

LARGE SCALE JOBS (WILL BE DONE BY CENTRAL GROUPS WITH
SPECIALLY TRAINED PERSONNEL)

HYDROBLASTING TO REMOVE GASKETS

1/14/87

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APPENDIX A

Asbestos RECOMMENDED EQUIPMENT*Willie's
Approved list*

The equipment listed below has been approved for the specific use, but is not necessarily the only equipment available. Industrial Hygiene Services should be contacted for use permission before purchasing any equipment not listed.

I. Respiratory Protection for Asbestos Fibers

Airborne Asbestos Concentration ¹	Approved/Required Respirator ²	Supply Source
≤ 2 fibers/cc	Half-mask/cartridge #	Stores
	MSA/464035 H-E ³	Stores
	Scott/642H-E	Stores
	A.O./R57A H-E	Stores
≤ 10 fibers/cc	Full facepiece/cartridge	
	Scott-O-Vista/642 H-E	Vallen
	A. O. Star/R57A H-E	Stores
	Racal/Be3/P3 or Be7/P3	Vallen
≤ 20 fibers/cc	Positive pressure respirator:	
	(1) Full face powered air-purifying respirator	
	A. MSA/464035	Stores
	B. Racal/Be3/P3 or Be7/P3	Vallen
	(2) Half-mask supplied air	
	A. Scott/supplied air	Vallen
	B. MSA/supplied air	Vallen
	C. A.O./supplied air	Vallen

¹Contact IHS for assistance in determining asbestos concentration.

²Respirators specified for higher concentrations can be used at lower concentrations of asbestos.

³High efficiency (H-E) particulate air filter

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QUALITATIVE FACEPIECE FIT TEST

SCOTT FIT-CHEK AMPOULES (BANANA OIL) 10 AMPOULES PER
PACKAGE

1. DON FACEPIECE
2. CRUSH AMPOULE
3. HOLD AMPOULE APPROXIMATELY 1 TO 2
INCHES FROM FACE. PASS AMPOULE
AROUND THE FACE SEAL AREA AND EX-
HALATION VALVE, WHILE WEARER
BREATHES DEEPLY.
4. LEAKAGE WILL BE NOTED IF THE USER
DETECTS A "BANANA-LIKE" ODOR IN
THE FACEPIECE.

ORDER #80281701

1/14/87

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DISPOSABLE TYVEK COVERALLS

STYLE #1414 TYVEK COVERALLS WITH ATTACHED HOOD, ATTACHED
BOOT, AND ELASTIC WRISTS.

NOW AVAILABLE ON M & S

SMALL	#01-03551-001
MEDIUM	#01-03552-001
LARGE	#01-03553-001
X-LARGE	#01-03554-001

CURRENT VENDOR HAS AGREED TO SUBSTITUTE THESE COVERALLS
FOR THE COVERALL LESS ATTACHED BOOT LISTED ON PAGE 3 OF
THE 1986 M & S CATALOG.

EFFECTIVE: 1-14-87

1/14/87

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ASBESTOS DANGER SIGNS AND LABELS

14" X 20" RIGID PLASTIC

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY
RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

VSP #01-03374-000

4" X 4" ADHESIVE VINYL LABELS 25/PK
5" X 5"

DANGER
CONTAINS
ASBESTOS FIBERS.
AVOID CREATING DUST.
CANCER AND LUNG
DISEASE HAZARD.

VSP #01-03372-000

1/14/87

604804018

ASBESTOS DANGER DISPOSAL BAGS

EACH BAG IS PRINTED WITH THE FOLLOWING LEGEND:

DANGER - CONTAINS ASBESTOS FIBERS. AVOID
CREATING DUST. CANCER AND LUNG DISEASE
HAZARD.

STANDARD BURIAL BAG: 30" X 48" SIZE, 6 MIL
THICKNESS, 50/CASE

VSP #17-30522-000

GLOVE BAGS (HANDS IN BAGS): AVAILABLE IN A WIDE RANGE
OF SIZES. MOST COMMON SIZE
44" X 60", 6 MIL THICKNESS
25/CASE

1/14/87

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RACAL POWERFLOW
POWERED AIR-PURIFYING RESPIRATOR

THE RACAL POWERFLOW FALLS INTO THE NIOSH CATAGORY OF POWERED AIR-PURIFYING RESPIRATORS THAT CAN BE UTILIZED IN AIRBORNE CONCENTRATIONS OF ASBESTOS NOT IN EXCESS OF 100 X PEL. THE POWERFLOW INCORPORATES A FULL FACEPIECE RESPIRATOR WITH A HEPA FILTER POWERED BY A RECHARGEABLE NICAD BATTERY PACK. IT PROVIDES POSITIVE PRESSURE, CONSTANT FLOW TO THE USER AT ALL TIMES. THE UNIT IS EASILY DECONTAMINATED AND PROVIDES 8 HOURS CONTINUED USE ON THE RECHARGEABLE BATTERY PACK.

1/14/87

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IMMEDIATE ACTION ITEMS

TRAIN PERSONNEL

OBTAIN NECESSARY SUPPLIES

CLEAN-UP STORAGE AREAS

LABEL STORAGE AREAS

CLEAN-UP GASKET CUTTING FACILITIES

ESTABLISH CONTACT WITH INDUSTRIAL HYGIENE REPRESENTATIVE
FOR GUIDANCE AND DATA COLLECTION

OBTAIN HEPA VACUUMS AS REQUIRED

IMPLEMENT PROCEDURES

METHOD FOR AREA COMMUNICATION WHEN REGULATED AREAS ARE
ESTABLISHED

LONGER TERM ACTIONS

MONITOR NUMEROUS JOBS TO EXPAND DATA BASE

DEVELOP PROCEDURES TO PERFORM KEY PROBLEM JOBS SO THAT
THEY ARE LOW EXPOSURE

BEGIN EXPEDITED EFFORT TO SUBSTITUTE NON-ASBESTOS
MATERIALS FOR GASKETS, PACKING, ETC.
(MATERIALS TECHNOLOGY TO ASSIST)

CONTINUE TO IDENTIFY AND REACT TO ASBESTOS CONTAINING
MATERIALS

1/14/87

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PROPOSED HANDLING PROCEDURE FOR ASBESTOS GASKETS AND PACKING

STORAGE FACILITY

Preformed gaskets and packing will be stored in a clean storage area. The storage area will be cleaned regularly with a HEPA filter vacuum to prevent accumulation of debris.

INSTALLATION AND REMOVAL OF GASKETS AND PACKING CONTAINING ASBESTOS

If the gasket or packing to be removed is not adhered to the seating surfaces and can be removed by hand, remove and dispose of properly. If the gasket or packing is adhered to the seating surfaces so that mechanical means are used (scraper, sander, etc.) and this operation creates particles in the air or surrounding area, then as a minimum, the asbestos abatement procedure for small scale short duration jobs shall be used.

1/10/87

Replaces sheet removed 1-8-87
[Signature]

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HEALTH & ENVIRONMENTAL SCIENCES INFORMATION CENTER
POTENTIAL HEALTH EFFECTS

PAGE 1
01/07/87

ASBESTOS

DR-0027-0713

REVISED: 12/11/86

SYNONYMS

AMPHIBOLE

APPEARANCE: fibrous solid in various colors

EXPOSURE GUIDELINES: OSHA PEL is 0.2 fiber ($>5 \mu\text{m}$) per cc.

OSHA General Industry Standard 29CFR1910.1001.

OSHA Construction Standard 29CFR1926.58.

ACGIH TLV is 0.5 fiber ($>5 \mu\text{m}$) per cc for amosite, Ala;

0.2 fibers ($>5 \mu\text{m}$) per cc for crocidolite; 2 fibers ($>5 \mu\text{m}$) per cc for chrysotile and other forms of asbestos, Ala.

POTENTIAL HEALTH EFFECTS

This section includes possible adverse effects which could occur if this material is not handled in the recommended manner. These effects apply to stated material and may not apply to dilutions or formulations of that material.

EYE

- Mechanical injury only.

SKIN

- Mechanical injury only.
- Skin absorption is unlikely due to physical properties.

INGESTION

- Single dose oral LD50 has not been determined.
- Amounts ingested incidental to industrial handling are not likely to cause injury; however ingestion of larger amounts may cause injury.

ACUTE INHALATION EFFECTS

- Excessive exposure to dust causes chronic inflammations of lung tissue and pleural membranes, as well as cancers, in both man and animals.

SUBCHRONIC EFFECTS

- Prolonged exposure to asbestos dust has been found to cause pulmonary fibrosis (asbestosis), which may be disabling and even fatal.

CHRONIC EFFECTS/CARCINOGENICITY

- Has been shown to cause cancer in humans.
- For hazard communication purposes under OSHA standard 29 CFR Part 1910.1200, this chemical is listed as a carcinogen by NTP and IARC Group I.

TERATOGENIC EFFECTS

- No relevant information found.

REPRODUCTIVE EFFECTS

- No relevant information found.

MUTAGENICITY

- Some forms of asbestos have been reported to induce chromosomal changes in tissue culture.

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