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UNION CARBIDE CORPORATION
ENGINEERING AND HYDROCARBONS DIVISION
CENTRAL ENGINEERING
SOUTH CHARLESTON, WEST VIRGINIA

UW-0148 F5(c)

JUN 30 1981

T. L. COLLINS

PLAINTIFF'S EXHIBIT
UC-3253

MEMORANDUM
June 26, 1981

TO: Mr. I. P. Blackwood
Mr. V. H. Johnkoski
Mr. J. A. Leonard
Mr. J. B. Leverton
Mr. K. G. Morlock
Mr. T. P. Raby
Mr. R. A. Ream
Mr. A. M. Robertson
Mr. R. J. Taylor
Mr. J. L. Wyatt

SHARE MGRS.
Mr. T. L. Collins
Dr. R. E. Plevan
Mr. R. C. Wise

COPY TO: Mr. J. A. Fisher
Mr. W. J. Hansen
Mr. E. C. Powell, Jr.
Mr. H. W. Wegert

FROM: Mr. D. T. Watters

SUBJECT: Potential Health Risks
Insulation Materials

RECEIVED
JUL 10 1981
SAFETY DEPT.

A March 17, 1981, E. C. Powell, Jr. memorandum to E. L. Adkins of Institute and a June 3, 1981, R. W. Cope letter to Component Health Managers and HS & EA Industrial Hygienists have described an insulation potential health risk. In response to these communications several of you have asked, Are substitute materials (not asbestos) available where appropriate?

Some background, our answer to the question, and proposed action is as follows.

1. The involved insulation, Insulation Specification 4 (copy attached), manufactured by Goodtemp Corporation and Celotex Corporation, is selected for ethylene oxide service because it gives a combination of the safest (i.e. highest) autoignition temperature to a laboratory simulated piping leak of ethylene oxide and excellent fire resistivity. The specification notes inhalation of perlite dust may cause irritations.

2. The complaints at Institute are the first to reach our attention during the past 3 - 4 years. The insulation vendors state no prior reports of health concerns. No other Locations have indicated excessive irritations.

3. Depending on ambient conditions, handling, and the amount of fitting required for the job, any insulation has the potential to create nuisance dust and irritations in some people. Respiratory protection in addition to good industrial hygiene practices can best be used where irritations seem to be isolated instances.

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4. Some Locations are probably using the specifications beyond the specific need in ethylene oxide service. If this is the case, an alternate specification might be used on other than ethylene oxide fluids.

5. Based on the desired safety performance of Insulation Specification 4 in ethylene oxide fluid service, and the apparent infrequent complaints noted in the communications, we recommend continued use of Specification 4 with respiratory protection used as needed by individuals. Numerous autoignition tests have been run in the Safety Research Laboratory and it is clearly demonstrated that a substitute insulation is not readily available.

6. If your Location receives complaints similar to those described in the March 17 and June 3 communications, please pass them to the Central Engineering Department Insulation Technologist, Ernie Powell, Ext. 4419, plus other interested Division Safety/Health Managers. There is concern for the health of our employees and if additional complaints are received, it may be desirable to trade an increment of safety on the autoignition data, for improved insulation health characteristics. However, any insulation will give some degree of dusting.

If you have comment relative to the above six items, please let us know. We will request the subject be an agenda item at the next S/H Managers meeting.

D. T. Watters

DTW:abg

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INSULATION

UNION CARBIDE STANDARD

CHEMICALS/PLASTICS

MATERIAL SPECIFICATION 4M :4M-B
4A :4A-B
4SS:4SS-B

PAGE 1 of 2

DATE DECEMBER 1980

SERVICE	TEMP. RANGE
This specification covers the insulation material for use on equipment and piping in reactive chemical service, such as ethylene oxide. Also for use on electric-traced systems.	15°C (59°F) to 650°C (1202°F)
LIMITATIONS	**MANDATORY ADD'L. SPECS**
	GS; AP-1, AP-2

PRECAUTIONS

Inhalation of perlite dust may cause minor nose and throat irritations.

SPEC. IDENTIFICATION

4M	Perlite with mastic	4M-B	Perlite with mastic plus cushioning blanket
4A	Perlite with aluminum	4A-B	Perlite with aluminum plus cushioning blanket
4SS	Perlite with stainless steel	4SS-B	Perlite with stainless steel plus cushioning blanket

ACCEPTABLE MAJOR MATERIAL COMPONENTS

COMPONENT	MATERIAL	TRADE NAME	MANUFACTURER
PIPE COVERING AND BLOCK	Expanded Perlite	Celotemp 1500 Goodtemp 1500	Celotex Corp. Goodtemp Corp.
WEATHER BARRIER	Mastic	WC-5 Jaxsan 600 L&L 300 Mastic Sealfas GPM #35-00[1] Vi-Cryl[1]	Vimasco Corp. Plastic Coatings Corp. L&L Coating Corp. Foster Div. of H. B. Fuller Co. Childers Products Co.
	Aluminum (Smooth or 3/16" Corrugated)	Type 3003 or 5005, H14 alum. roll jacketing with polyethylene coated .010" min. up to 24" dia. .016"min. 24"dia. and above .020" when crimping and goring of jacket is required.	Childers Products Co. Premetco International, Inc. RPR Products, Inc. Quality Service Metals, Inc.
	Stainless Steel	.010"thk type 301, 302 or 304 S.S. roll jacketing with polyethylene coated Kraft paper vapor barrier	Childers Products Co. Premetco International, Inc. RPR Products, Inc. Quality Service Metals, Inc.
CUSHIONING BLANKET [2]	Glass Wool (Above 800°F and all SS surfaces)	Temp-Mat Burl-Glas	Pittsburgh-Corning Corp. Burlington Glass Fabrics Co.
	Glass Wool (800°F and below)	Fiberglas TIW Type II Spin Glas No.1001 Ultralite No. 300 (425°F max)	Owens-Corning Fiberglas Corp. Johns-Manville Corp. Certain-Teed Corp.

NOTES

(1) Approved for use at Ponce, Torrance and Gulf Coast Locations only.

(2) Cushioning blanket normally required only on equipment larger than 10' O.D. and operating above 200°C (392°F).

Expanded Perlite shall conform to ASTM Standard Specification C610 (latest revision).

24.5.1.1

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INSULATION

UNION CARBIDE

CHEMICALS/PLASTICS

ACCEPTABLE ACCESSORY MATERIAL COMPONENTS

COMPONENT	TRADE NAME	MANUFACTURER
Insulating Cement (Hydraulic Setting)	Hilcote Finishing Cement Quik-Set Super-Powerhouse Pabcote Cement Thermokote 1-MWP	Holmes Insulations Ltd. Forty-Eight Insulations, Inc. Keene Corp. Pabco Div. of Fibreboard Corp. Ryder Industries, Inc.
Reinforcing Fabric	Elastafab #894 PC Fabric 79 Q	Vimasco Corp. Pittsburgh-Corning Corp.
Fabricating Cement	Fibrous Adhesive #81-93AF Brush Grade 7B High Temp Adhesive	Foster Div. of H. B. Fuller Co. Michael Walter Industries
Heat Resistant Sealer	Silastic 732RTV #30-43	Dow Corning Corp. Foster Div. of H.B. Fuller Co.
Wire Netting	One inch, hexagonal mesh, 20 gage, Type 304 or 430 SS or Monel	(Any building materials supplier)
Insulation Strap Pipe Equipment	 3/8" x .015 Type 304 SS 1/2" x .020 Type 304 SS	Childers Prod. Co. A. J. Gerrard Techalloy Band-It Co.
Strap Clip Pipe Equipment	 3/8" x 1/2" double pronged SS 1/2" x 7/8" double pronged SS	Childers Prod. Co. A. J. Gerrard Techalloy Band-It Co.
Stainless Steel Wire	18 gage dead soft annealed Type 304 or 430 SS	(Any building materials supplier)
Insulating Cement (Air Setting)	Super 48 Cement Super 1900 Thermokote - MW No. 1 Insulating Cement	Forty-Eight Insulations, Inc. Keene Corp. Ryder Industries, Inc. Holmes Insulations, Ltd.

24.5.1.1

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