

OFFICE OF TOXIC SUBSTANCES
CODING FORM FOR GLOBAL INDEXING

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Chemical Name (300 per name)	25		CAS No. (10)	24
GLYCIDOL & ITS DERIVATIVES			999999994	



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Industrial Medicine

APR 30 1979

878214012

CAS No. 7328-97-4

RECEIVED
JAN 31 1987

April 25, 1979

E. M. Flint, M. D.
Director
Industrial Medicine
Safety, Health & Ecology
Ciba-Geigy Corporation
Ardsley, New York 10502

THIS DOCUMENT HAS BEEN DECLASSIFIED
PER LETTER FROM CIBA-GEIGY DATED
MARCH 1, 1984. (SEE LAST SIX FRAMES
OF FICHE (FICHE SET)).

Dear Dr. Flint:

I attach a copy of the report from Mellon Institute on Epoxy Resin ERRA-0163. This is the only toxicology data that we have.

I cannot supply data on content of epichlorohydrin, phenyl glycidyl ether or other glycidyl ethers. Union Carbide sold the whole ERRA-0163 business to Ciba-Geigy in 1974. It would be difficult to dig up data from inactive files and probably wouldn't apply to product of your present manufacture anyhow.

Very truly yours,

Associate Corporate Medical Director

C. U. Dernehl, M. D.
lm
Attachment

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Special Report 33-71
5 Pages

R: 7-16-70

Chemical Hygiene Fellowship
MELLON INSTITUTE
Carnegie-Mellon University

Industrial Medicine

APR 30 1973

Epoxy Resin ERRA-0163

Range Finding Toxicity Studies

Editor: C. S. Weil

Contributors: N. I. Condra, E. R. Kinhead

For: UNION CARBIDE CORPORATION, Chemicals and Plastics Operations Division

Summary

Stomach Intubation, rat - LD50 > 5.0 gm./kg.; 1 ml. = 0.20 gm.
in PEG 400.

Skin Penetration, rabbit - LD50 > 8.0 gm./kg.; 1 ml. = 0.50 gm.
in acetone.

Inhalation, rat -
Substantially saturated vapor
8 hours killed 0 of 6

Uncovered Skin Irritation, rabbit - no irritation from a 50%
solution in acetone.

Eye Injury, rabbit - none from the powder; minor from a 20%
solution in polyethylene glycol 400.

Interpretation

No deaths resulted when maximum deliverable quantities of epoxy resin ERRA-0163 were presented to rats perorally and by inhalation and to rabbits by the skin penetration route. Furthermore, neither skin irritation from a 50% acetone solution nor eye irritation from the powder resulted on rabbits. However, as this resin contains more than one epoxide group, repeated skin contact should be avoided as some diepoxides have been shown to result in mouse skin cancer.

Sample

Quantity: one pound	Date Received: 6-5-70	M. I. Sample No.: 33-159
Submitted by: G. Salensky	Division: Chemicals and Plastics Bound Brook, New Jersey	
Identification: from Batch 9 Solid, lumps.	Charge No.: 07665	

Peroral, Single Dose to Rats

LD₅₀ > 5.0 gm./kg.; 1 ml. = 0.20 gm. in PEG 400.

Conditions - standard.

Dosage; gm./kg.	Dead Dosed	Days to Death	Weight Change	Signs and/or Symptoms
5.0	0/5	-	89 to 136	Sluggish 15 minutes after dose.

Gross Pathology - none noted.

Conclusions - slight acute peroral toxicity, at most.

Skin Penetration, Single Dose to Rabbits

LD₅₀ > 8.0 gm./kg.; 1 ml. = 0.50 gm. in acetone.

Conditions - standard; under polyethylene sheeting.

Dosage; gm./kg.	Dead Dosed	Days to Death	Weight Change	Skin Irritation	Signs and/or Symptoms
8.0	0/4	-	-110,-68, 150,178	None.	-

Gross Pathology - nothing remarkable.

Conclusions - slightly toxic, at most, by acute skin penetration.

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Inhalation, Single, by Nats

Conditions - procedure B.

Procedure	Time	Concentration	Dead Dosed	Days to Death	Weight Change	Signs and/or Symptoms
B	8 hrs.	Substantially saturated vapor.	0/6	-	42 to 65	None.

Gross Pathology - nothing remarkable.

Conclusions - no hazard is anticipated from the infrequent inhalation of substantially saturated vapor generated at room temperature under normal handling conditions.

Skin Irritation, Rabbit, Uncovered

Conditions - standard.
Applied as a 50% solution in acetone.

Conclusions - no skin irritation.

Eye Irritation, Rabbit

Conditions - standard.
Instilled as a powder or as a 20% solution in PEG 400.

Conclusions - no irritation from the powder. Minor irritation at most from 0.5 ml. of the 20% solution in PEG 400.

Carrol S. Weil

Carrol S. Weil, M.A.
Senior Fellow

Approved:

Charles P. Carpenter

Charles P. Carpenter, Ph.D.
Administrative Fellow

Acknowledgments:

Skin Penetration, Irritation Tests

Naomi I. Condra, B.S.
Junior Fellow

Inhalation Studies

Edwin R. Kinkead, B.S.
Junior Fellow

Typed: July 17, 1970 - md

Standard Test Procedures

In all tests, the nonfasted animals are maintained on appropriate Rockland diets and water ad lib except during period of manipulation or confinement. Dosage levels differ by a factor of 2 in a geometric series. LD50s or LC50s are calculated by the moving average method based on a 14-day observation period.

Peroral. Compounds administered by stomach intubation to Wistar derived male rats, 90-120 grams in weight and 3 to 4 weeks of age, reared in our own colony.

Skin Penetration. Male albino rabbits, 3 to 5 months of age, are immobilized during the 24-hour contact period with the compound retained under impervious sheeting on the clipped intact skin of the trunk. Thereafter, excess fluid is removed to prevent ingestion. Maximum dosage that can be retained is 20 ml./kg.

Inhalation. Procedure A. Concentrated vapor is generated in a gas washing bottle by passing dried air at 2.5 liters/min. through a fritted glass disc immersed to a depth of at least 1-1/2 inches in the chemical which is delivered to rats in a 9-liter glass exposure chamber. Mean vapor concentration is calculated from the loss in weight of the liquid or estimated from the vapor pressure at the actual temperature of the chemical during aeration.

Procedure B. Substantially saturated vapor is prepared by spreading 50 grams of chemical over 200 cm.² area on shallow tray placed near the top of a 120-liter glass chamber which is then sealed for at least 16 hours while an intermittently operated fan agitates the internal chamber atmosphere. Rats are then introduced in a gasketed drawer-type cage designed and operated to minimize vapor loss.

Procedure C. Mist, vapor and any oxidation or decomposition products of the chemical held at 170°C. are generated and delivered as in A.

Procedure D. Vapor at metered concentration, not checked analytically, is generated by feeding the liquid at a constant rate down the inside of a spirally corrugated surface of a minimally heated one inch Pyrex tube, through which metered air is passed. Resultant vapor is delivered as in A.

Procedure E. Spray - Solutions or suspensions are atomized in a glass VAPONEFRIN nebulizer using dried compressed air at 9 liters/min. (corrected) and 22 p.s.i. The resultant aerosol of droplets averaging 2 microns in diameter is conducted directly into a 60-liter cubic glass chamber containing rats. Mean aerosol concentration is calculated from the amount of material atomized.

Procedure F. Dust - Dust clouds are generated by a baffled Wright Dust Feed through which air is passed at 20 liters/min. (uncorrected) at 15 p.s.i. The dust is delivered directly to a 120-liter plexiglas chamber containing rats. Airborne dust concentrations are measured gravimetrically every half hour.

Skin Irritation. Chemical is applied in 0.01 ml. amounts to clipped, uncovered intact skin of 5 rabbit bellies either undiluted or in progressive dilutions of 10, 1, 0.1, and 0.01% in solvent. Ten grades are recognized based on appearance of moderate or marked capillary injection, erythema, edema or necrosis within 24 hours. No injury from undiluted = Grade 1.

Eye Irritation. Eyes not staining with 5% fluorescein in 20 seconds contact are accepted. Single instillation of 0.005, 0.02, 0.10 or 0.5 ml. undiluted or of 0.5 ml. of 40, 15, 5 and 1% dilutions are made into conjunctival sac of 5 rabbits. Read immediately unstained and after fluorescein at 24 hours, with ten grades recognized. Trace or no injury from 0.5 ml. undiluted = Grade 1.

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