

MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A., Midland, MI 48674 Emergency Phone: 517-636-4400

PRODUCT NAME: MPEB/1,3-bis (1-(4-methylphenyl)ethenyl) benzene

Product Code:

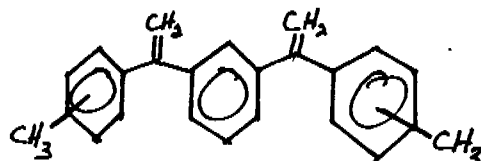
Page: 1

Effective Date: ~~10/21/85~~ Date Printed: ~~07/20/85~~

MSD:

1. INGREDIENTS:

(Include CAS numbers and percentages)



100%

CAS #: not known

Substances listed in the Ingredients Section are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Standard. Where proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.1200(I).

2. PHYSICAL DATA:

BOILING POINT: F C 195 - 200°C at 5mm Hg
 VAP. PRESS: Low mmHg @ C
 VAP. DENSITY (Air=1): NA
 SOL. IN WATER: 0.4 mg/L
 SP. GRAVITY: NA
 FREEZING POINT: (Optional) 63 - 64°C
 APPEARANCE: Solid White
 ODOR: hydrocarbon ethereal, very slight

3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: F C Solid; unknown; high if any
 METHOD USED: ___TCC ___PMCC ___SFCC ___Other (specify):

FLAMMABLE LIMITS NA
 LFL: @ C
 UFL: @ C

EXTINGUISHING MEDIA: ___Water fog ___Foam ___CO2
 ___Dry chemical ___Other (specify):
 NA

FIRE AND EXPLOSION HAZARDS:

NA

FIRE-FIGHTING EQUIPMENT: NA

(Continued on Page 2)

(R) Indicates a trademark of The Dow Chemical Company

DO 085136
 CONFIDENTIAL

M A T E R I A L S A F E T Y D A T A S H E E T

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

PRODUCT NAME: Product Code: Page: 2

Effective Date: ~~12/31/88~~ Date Printed: ~~01/02/90~~ MSD:

4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID)

NA

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID)

NA

HAZARDOUS DECOMPOSITION PRODUCTS:

NA

HAZARDOUS POLYMERIZATION: ___Not applicable __XWill not occur
___Will occur under which conditions:

5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ENVIRONMENTAL DATA: (Optional) (H&ES) Highly Toxic to daphnid (.18 mg/L)
Nontoxic to fathead minnows at 10mg/L
ACTION TO TAKE FOR SPILLS/LEAKS:
Sweep up material

DISPOSAL METHOD: Bury in approved landfill according to Local, State, and Federal regulations

6. HEALTH HAZARD DATA:

(Completed by H&ES)

EYE: May cause slight transient (temporary) eye irritation

SKIN CONTACT: Non-irritating

SKIN ABSORPTION: Not likely to be absorbed in acutely toxic amounts

INGESTION: Low single dose oral toxicity

LD50 for female rats was greater than 5000mg/kg

INHALATION: Single exposure to dust or vapors is not likely to be hazardous

SYSTEMIC & OTHER EFFECTS: NA

7. FIRST AID:

(Completed by H&ES)

(Continued on Page 3)

(R) Indicates a trademark of The Dow Chemical Company

DO 085137
CONFIDENTIAL

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Effective Date: ~~12/31/85~~ Date Printed: ~~01/07/86~~ MSD:

EYES: Irrigate immediately with water for 15 min.

INGESTION: Treat systemically

INHALATION: Treat systemically

NOTE TO PHYSICIAN: (Optional)

(Completed by H&ES)

EXPOSURE GUIDELINE(S): NA

VENTILATION: good general ventilation should be sufficient

RESPIRATORY PROTECTION: in dusty atmospheres use an approved dust respirator

SKIN PROTECTION: Reasonable care and cleanliness

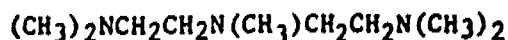
EYE PROTECTION: Wear safety glasses

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: (Optional)
(Completed by PS and/or QAC)

OTHER NOTES: (Optional) If product is dissolved in a solvent, the MSDS for the solution should be consulted

MSDS STATUS: (Completed by PSC)

DO 085138
CONFIDENTIAL



MATERIAL SAFETY DATA SHEET



PRODUCT NAME: N,N,N',N'',N''' Pentamethyldiethylenetriamine

#11395

CHEMICAL NATURE: Alkyl Amine

% ACTIVITY: 97+%

PHYSICAL DATA

BOILING POINT, 760 mm. Hg	198° - 199°C	FREEZE POINT	No Data
SPECIFIC GRAVITY	0.828	VAPOR PRESSURE AT 20°C.	No Data
VAPOR DENSITY	No Data	SOLUBILITY IN H ₂ O	Soluble
PER CENT VOLATILES BY WEIGHT	No Data	IONIC NATURE	Yes
APPEARANCE AND ODOR	Colorless to pale yellow liquid, strong ammoniacal odor		

HAZARDOUS INGREDIENTS

MATERIAL	%	TLV (Units)
N,N,N',N'',N''' Pentamethyldiethylenetriamine	97+%	Not Established
ACUTE TOX DATA: Oral-Rat: LD ₅₀ =1630 mg/kg Skin - Rabbit: LDLO= 280 mg/kg		
NIOSH/RTECS: 1979		

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (test method)	218°F	AUTOIGNITION TEMPERATURE		No Data	
FLAMMABLE LIMITS IN AIR, % by volume		LOWER	N.D.	UPPER	N.D.
EXTINGUISHING MEDIA	Combustible Liquid. If involved in a fire, use water, carbon dioxide, dry chemical extinguishing agents, dry sand, or dry ground dolomite.				
SPECIAL FIRE FIGHTING PROCEDURES	If involved in a fire, wear NIOSH/MSHA approved self-contained breathing apparatus, flame & chemical resistant clothing; hats, boots & gloves. If without risk, remove material from fire area. Cool containers with water from maximum distance.				
UNUSUAL FIRE AND EXPLOSION HAZARDS	No unusual hazards known.				

DO 085139
CONT

6/81

Thiokol/Ventron Division

DO 085139
CONFIDENTIAL

THRESHOLD LIMIT VALUE	Not Established
EFFECTS OF OVEREXPOSURE	Material can cause irritation & possible burns to skin & eyes. Ingestion may cause severe damage to gastr-intestinal tract. Inhalation can cause irritation & swelling.
EMERGENCY AND FIRST AID PROCEDURES	Remove from exposure. <u>Eyes</u> : Flush with copious amounts of water for at least 15 minutes. <u>Skin</u> : Remove contaminated clothing. Flush affected area with copious amounts of water for at least 15 minutes. In both above cases, seek prompt, competent medical attention. <u>Ingestion/Inhalation</u> : Seek prompt, competent medical attention.

STABILITY		CONDITIONS TO AVOID	Avoid Incompatibilities
UNSTABLE	STABLE		
	X		
INCOMPATIBILITY (materials to avoid)		Acids, moisture, carbon dioxide, non-ferrous metals.	
HAZARDOUS DECOMPOSITION PRODUCTS		No Data	
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	Not Applicable
May Occur	Will not Occur		
	X		
STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED		Wearing full respiratory protection & clothing. (See Sec VII), stop leak if without risk. Cover spill with bisulfate & carefully place in a well-marked container. Submit or retain for disposal.	
WASTE DISPOSAL METHOD		Consult state, local, and federal regulations for proper disposal of Alkyl Amines.	

RESPIRATORY PROTECTION (specify type)		For ordinary use wear a NIOSH/MSHA approved high efficiency ammonia vapor-cartridge respirator & for emergency use, wear self-contained breathing apparatus	
VENTILATION	LOCAL EXHAUST	Fume Hood	SPECIAL
	MECHANICAL	Not Adequate	OTHER
PROTECTIVE GLOVES		Butyl Rubber Neoprene or vinyl	EYE PROTECTION
OTHER PROTECTIVE EQUIPMENT		Lab coat&/or neoprene apron, boots, safety drench shower, eye wash capable of sustained flushing & hygienic washing facilities.	

PRECAUTIONARY LABELING	DANGER! Corrosive & causes severe burns & ulceration on contact with skin & eyes. Toxic upon ingestion & inhalation.
OTHER HANDLING AND STORAGE CONDITIONS	Keep container tightly closed when not in use. Store in a cool, dry, well ventilated area. Wash thoroughly after use.

DO 085140
CONFIDENTIAL