



# MATERIAL SAFETY DATA SHEET

## 5234B

### 1. Substance / preparation and company identification

Use : Intermediate for the chemical industry

### 2. Composition / information on ingredients

Chemical nature

2, 2'-dimethyl-4, 4'-methylenebis (cyclohexylamine)

CAS Number : 6864 - 37 - 5

EG-Number : 229 - 962 - 1

INDEX-Number : 612 - 110 - 00 - 1

### 3. Hazard identification

Toxic by inhalation and in contact with skin.

Harmful if swallowed.

Causes severe burns.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 4. First-aid measures

General advice : Immediately remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.

If inhaled : Keep patient calm, remove to fresh air, seek medical attention.

On skin contact : Immediately wash thoroughly with plenty of water, apply sterile dressings, and consult a skin specialist.

On contact with eyes : Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion : Rinse mouth immediately and then drink plenty of water, seek medical attention.

Note to physician : Treatment - Treat according to symptoms (decontamination, vital functions), no known specific antidote.



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### 5. Fire-fighting measures

Suitable extinguishing media : Water, dry extinguishing media, foam, carbon dioxide extinguishing media

Special protective equipment : Wear self-contained breathing apparatus and chemical-protective clothing.

Further information : Collect separately contaminated extinguishing water; do not allow to reach sewage or effluent systems.

### 6. Accidental release measures

Personal precautions : Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions : Do not empty into drains.

Method for cleaning up or taking up :

For large amounts - Pump off product.

For residues - Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

### 7. Handling and storage

#### Handling

Ensure thorough ventilation of stores and work areas. Avoid aerosol formation.

Protection against fire and explosion : Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

#### Storage

Segregate from acids and acid forming substances.

Further information on storage conditions : Containers should be stored tightly sealed in a dry place.

Storage stability : -

Storage duration : 24 Months

### 8. Exposure Controls and personal protection

#### Personal protective equipment

Respiratory protection : Wear respiratory protection if ventilation is inadequate.

Hand protection : Suitable chemical resistant safety gloves (EN 374) also with



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prolonged, direct contact (Recommended : Protective index 6, corresponding > 480 minutes of permeation time according to EN 374) :

e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other) Manufacturer's directions for use should be observed because of great diversity of types.

Supplementary note : The specifications are based on own tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined in accordance to EN 374.

Eye protection : Tightly fitting safety goggles (splash goggles) (EN 166)

Body protection : Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to DIN-EN 465).

General safety and hygiene measures : Avoid contact with the skin, eyes and clothing. Do not breathe vapour/ spray.

### 9. Physical and chemical properties

Form	: Liquid
Colour	: Colourless to yellow
Odour	: Amine-like
pH value	: 11 (3, 6 g/l, 20°C)
Melting point	: -7 to -1°C
Boiling point	: 347°C (1.013 mbar)
Flash point	: 173°C (DIN 51758)
Lower explosion limit	: 0,5% (V)
Upper explosion limit	: 2,8% (V)
Ignition temperature	: 275°C (DIN 51794)
Vapour pressure	: 0,0003 mbar (30°C)
Density	: 0,944 g/cm <sup>3</sup> (20°C)
Solubility in water	: 3, 6 g/l (20°C)
Partitioning coefficient	: 2,51
n-octanol/water (low Pow)	
Viscosity, dynamic	: 142 mPa.s (20°C)



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### 10. Stability and reactivity

Hazardous reactions : Strong exothermic reaction with acids.

### 11. Toxicological information

LD50/oral/rat : 320 - 460 mg/kg

LC50/by inhalation/rat : 0,42 mg/l / 4 h

An aerosol was tested.

By inhalation :

Inhalation-risk test (IRT) - No mortality within 7 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

LD50/dermal/rabbit : 200 - 400 mg/kg

Primary skin irritation/rabbit : Corrosive. (Draize test)

Primary irritations of the mucous membrane/rabbit : Risk of serious damage to eyes.

Sensitization/Skin painting test/ guinea pig : Skin sensitizing effects were not observed in animal studies.

Additional information : No experimental evidence available for genotoxicity in vitro (Ames test negative).

### 12. Ecological information

#### Ecotoxicity

Toxicity to fish	:	DIN 38412 Part 15
Leuciscus idus/LC50	:	>22 - <46 mg/l
Aquatic invertebrates	:	OECD Guideline 202, part 1
Daphnia magna/EC50 (48 h)	:	15,2 mg/l
Aquatic plants	:	OECD Guideline 201
Scenedesmus subspicatus/EC50 (72 h)	:	2,1 mg/l
Microorganisms/Effect on activated sludge	:	DIN 38412 Part 8
Pseudomonas putida/EC50 (17 h)	:	96 mg/l
DIN/EN/ISO 8192-OECD 209-88/302/EEC, P. C/EC20	:	160 mg/l

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.



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### Persistence and degradability

#### Elimination information

Test method : OECD Guideline 302 B  
Method of analysis : DOC reduction  
Degree of elimination : < 10%  
Evaluation : poorly eliminated from water

### Bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

### Additional information

Other ecotoxicological advice : Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

### 13. Disposal considerations

Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging : Packs must be completely emptied.

Uncleaned empties should be disposed of in the same manner as the contents.

### 14. Transport information

#### Land transport

ADR	Class	: 8
	Packaging group	: 1
	UN-number	: 2922
	Designation of goods	: CORROSIVE LIQUID, TOXIC, N.O.S. (Contains : 3.3'-DIMETHYL-4.4'- DIAMINODICYCLOHEXYLMETHANE)
RID	Class	: 8
	Packaging group	: 1
	UN-number	: 2922
	Designation of goods	: CORROSIVE LIQUID, TOXIC, N.O.S. (Contains : 3.3'-DIMETHYL-4.4'- DIAMINODICYCLOHEXYLMETHANE)



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### Inland waterway transport

ADNR : Class : 8  
Item / Letter : 76a)  
Packaging group : 1  
UN-number : 2922  
Designation of goods : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Contains : 3.3'-DIMETHYL-4.4'-  
DIAMINODICYCLOHEXYLMETHANE)

### Sea transport

ADNR : Class : 8  
Packaging group : 1  
UN-number : 2922  
Marine pollutant : YES  
Exact technical name : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Contains : 3.3'-DIMETHYL-4.4'-  
DIAMINODICYCLOHEXYLMETHANE)

### Air transport

ICAO/IATA : Class : 8  
Packaging group : 1  
UN-number : 2922  
Exact technical name : CORROSIVE LIQUID, TOXIC, N.O.S.  
(Contains : 3.3'-DIMETHYL-4.4'-  
DIAMINODICYCLOHEXYLMETHANE)

## 15. Regulatory information

### Regulations of the European union (Labeling) / National legislation/Regulations

EG-Number : 229-962-1

Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous substances :

#### Hazard symbol(s)

T Toxic  
C Corrosive  
N Dangerous for the environment



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### R - phrase(s)

R22	Harmful of swallowed
R23/24	Toxic by inhalation and in contact with skin
R35	Causes severe burns
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### S - phrase(s)

S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S36 / 37 / 39	Wear suitable protective clothing, gloves and eye/face protection.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Hazard determinant component(s) for labeling : 2,2-DIMETHYL-4,4-METHYLENBIS (CYCLOHEXYLAMINE)

### Other regulations

### 16. Other information

Recommended use : hardeners for epoxy resins, initial product for chemical syntheses