




Material Safety Data Sheet

NFPA	Transport Symbol
	

Preparation Date 14-May-2007

Revision Date 14-May-2007

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name 4,4'- METHYLENE DIANILINE
Product Code 3602800
Synonyms Benzamine, 4,4'- ,Methylenebis-; 4,4'-Methylene Dianiline
Formula CH13H14N2
CAS Number 101-77-9
Contact
ACETO CORPORATION
One Hollow Lane
Lake Success, NY 11042-1215
Phone: (516) 627-6000
Fax: (516) 627-6093
Email: regulatory@aceto.com
ChemTrec Emergency Telephone Numbers 1-800-424-9300
1-703-527-3887

2. HAZARDS IDENTIFICATION

Emergency Overview

Toxic. Harmful by inhalation, in contact with skin and if swallowed. Irritant. May cause cyanosis. May cause cancer. Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making a satisfactory assessment. Possible risks of irreversible effects. May cause heritable genetic damage. California Proposition 65 Carcinogens List. OSHA Regulated Substance - see 29CFR 1910.1050. May cause sensitization by skin contact. Marine pollutant. Dangerous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Sensitivity to light.

Appearance Off-white, Chips.

Physical State Solid.

Odor Not available

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Mexico - Grade Slight risk, Grade 1

Potential Health Effects

Principle Routes of Exposure Not available.

Acute Effects

Eyes	Irritating to eyes. Avoid contact with eyes.
Skin	Harmful in contact with skin. Irritating to skin. Avoid contact with skin.
Inhalation	Harmful by inhalation. Irritating to mucous membranes. Irritating to respiratory system.
Ingestion	Harmful if swallowed. May cause irritation of the digestive tract.
Acute Effects	Effects may be delayed. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer. Methemoglobinemia is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis, rapid heart rate, unconsciousness and possible death. Kidney injury may occur. Overexposure may produce fever, chills, loss of appetite, vomiting, and jaundice.
Chronic Effects	Avoid repeated exposure. May cause sensitization by skin contact. May cause cancer. Substances which cause concern for man owing to possible mutagenic effects but for which the available information is not adequate for making a satisfactory assessment. Possible risks of irreversible effects. May cause heritable genetic damage. California Proposition 65 Carcinogens List. OSHA Regulated Substances - see 29CFR 1910.1050.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions	Not available
Interactions with Other Chemicals	Not available
Potential Environmental Effects	Marine pollutant. Dangerous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number	101-77-9
Formula	CH13H14N2

Hazardous Components

Chemical Name	CAS-No	Weight %
4,4'- Diaminodiphenyl Methane	101-77-9	60 - 100

4. FIRST AID MEASURES

General Advice	Show this safety data sheet to the doctor in attendance.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Call a physician immediately.

Conditions to Avoid	Heat, flames and sparks.
Incompatible Materials	Oxidizing agents. Acids.
Hazardous Decomposition Products	Carbon monoxide, Carbon dioxide (CO ₂), Nitrogen oxides (NO _x).
Possibility of Hazardous Reactions	None under normal processing

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
4,4'- Diaminodiphenyl Methane	= 335 mg/kg Oral LD50 Rat	= 200 mg/kg Dermal LD50 Rabbit	> 0.85 mg/L Inhalation LC50 Rat 4 h

Chronic Toxicity

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA	Mexico
4,4'- Diaminodiphenyl Methane	A3 - Confirmed animal carcinogen with unknown relevance to humans	Supplement 7 [1987], Monograph 39 [1986]	Reasonably Anticipated To Be A Carcinogen	Present	

Irritation	Not available
Corrosivity	Not available
Sensitization	May cause allergic skin reaction.
Neurological Effects	Not available
Mutagenic Effects	Possible risks of irreversible effects. May cause heritable genetic damage.
Reproductive Effects	Not available
Developmental Effects	Not available
Target Organ Effects	Spleen, Liver, Kidney, Blood, Bladder, Central Vascular System (CVS), Eyes.

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

4,4'- Diaminodiphenyl Methane**Freshwater Algae Data**= 21 mg/L EC50 *Scenedesmus subspicatus* 72 h**Microtox Data**= 5.99 mg/L EC50 *Photobacterium phosphoreum* 5 min= 6.57 mg/L EC50 *Photobacterium phosphoreum* 15 min= 6.57 mg/L EC50 *Photobacterium phosphoreum* 30 min= 6.6 mg/L EC50 *Photobacterium phosphoreum* 1 h**Persistence / Degradability** Not available**Bioaccumulation / Accumulation** Not available**Mobility in Soil** Not available4,4'- Diaminodiphenyl Methane**log Pow** = = 1.46 25 °C**13. DISPOSAL CONSIDERATIONS**

Waste Disposal Method	Contact waste disposal services. Dispose of in accordance with local regulations.
Contaminated Packaging	Dispose of in accordance with local regulations. Empty containers should be taken for local recycling, recovery or waste disposal.
US EPA Waste Number	Not available

14. TRANSPORT INFORMATIONDOT

Proper Shipping Name	4,4`-Diaminodiphenyl methane
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Reportable Quantity (RQ)	4,4`-Methylenedianiline, RQ kg = 4.54
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to DOT.
Description	4,4`-Diaminodiphenyl methane ,6.1,UN2651,PG III,RQ (4,4`-Methylenedianiline),Marine Pollutant

TDG

Proper Shipping Name	4,4`-Diaminodiphenylmethane
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to TDG.

<u>MEX</u>	
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Description	UN2651, 4,4`-Diaminodiphenylmethane,6.1,III
<u>ICAO</u>	
UN-No	UN2651
Proper Shipping Name	4,4`-Diaminodiphenylmethane
Hazard Class	6.1
Packing Group	III
Description	4,4`-Diaminodiphenylmethane,6.1,UN2651,PG III
<u>IATA</u>	
UN-No	UN2651
Hazard Class	6.1
Packing Group	III
ERG Code	6L
Description	UN2651,4,4`-Diaminodiphenylmethane,6.1,PG III
<u>IMDG/IMO</u>	
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
EmS No.	F-A, S-A
Marine Pollutant	This product contains a chemical which is listed as a marine pollutant according to IMDG/IMO
Description	UN2651, 4,4`-Diaminodiphenylmethane,6.1,PG III, Marine Pollutant
<u>RID</u>	
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Classification Code	T2
Description	UN2651 4,4`-Diaminodiphenylmethane,6.1,III,RID
ADR/RID-Labels	6.1
<u>ADR</u>	
Proper Shipping Name	4,4`-Diaminodiphenylmethane
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Classification Code	T2
Description	UN2651 4,4`-Diaminodiphenylmethane,6.1,III,ADR
ADR/RID-Labels	6.1
<u>ADN</u>	
Proper Shipping Name	4,4`-Diaminodiphenylmethane
Hazard Class	6.1
UN-No	UN2651
Packing Group	III
Classification Code	T2
Description	UN2651 4,4`-Diaminodiphenylmethane,6.1,III
Hazard Labels	6.1
Limited Quantity	3 kg

15. REGULATORY INFORMATION

International Inventories

U.S.A. (TSCA)	Complies
Canada (DSL)	Complies
EU (ELINCS)	Does not Comply
EU (EINECS)	Complies
Japan (ENCS)	Complies
China	Complies
Korea (KECL)	Complies
Philippines (PICCS)	Complies
Australia (AICS)	Complies

Chemical Name	U.S.A. (TSCA)	Canada (DSL)	EU (EINECS)	EU (ELINCS)
4,4'- Diaminodiphenyl Methane	Present	Present	202-974-4	-

Chemical Name	Japan (ENCS)	China	Korea (KECL)	Philippines (PICCS)	Australia (AICS)
4,4'- Diaminodiphenyl Methane	4-40 4-0040	Present	KE-23803	Present	Present

USA

Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name

4,4'- Diaminodiphenyl Methane (CAS #: 101-77-9)

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product contains the following HAPs:

Chemical Name

4,4'- Diaminodiphenyl Methane (CAS #: 101-77-9)

Chemical Name	CAS-No	VOCs
4,4'- Diaminodiphenyl Methane	101-77-9	Present

Chemical Name	EPA: CERCLA RQ
4,4'- Diaminodiphenyl Methane	= 10 lb final RQ = 4.54 kg final RQ

State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	Category	Type
4,4'- Diaminodiphenyl Methane	101-77-9	carcinogen, initial date 1/1/88	Carcinogen

State Right-to-Know

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
4,4'- Diaminodiphenyl Methane	Carcinogen; Extraordinarily hazardous	sn 1256	Environmental hazard	Present	Toxic

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

Not determined

16. OTHER INFORMATION

Prepared By	Environmental Health and Safety, Regulatory Affairs
Preparation Date	14-May-2007
Revision Date	14-May-2007
Revision Summary	Not available

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS