MATERIAL SAFETY DATA SHEET

Date Printed: 02/18/2005 Date Updated: 08/30/2004

Version 1.4

Section 1 - Product and Company Information

Product Name TRIMETHYLAMINE, PRESSURE TIN WITH

> 100 M& 92250

Product Number Brand **FLUKA**

Company Sigma-Aldrich Canada, Ltd Street Address 2149 Winston Park Drive City, State, Zip, Country Oakville ON L6H 6J8 CA

Technical Phone: 9058299500 800-424-9300 Emergency Phone: Fax: 9058299292

Section 2 - Composition/Information on Ingredient

Substance Name CAS # SARA 313 75-50-3 TRIMETHYLAMINE No

Formula C3H9N

N, N-Dimethylmethanamine * Dimethylmethaneamine * Synonyms

Trimethylamine (ACGIH)

PA0350000 RTECS Number:

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Extremely Flammable (EU). Corrosive.

Extremely flammable. Harmful by inhalation and if swallowed.

Causes burns. Risk of serious damage to eyes.

Lachrymator.

HMIS RATING

HEALTH: 3

FLAMMABILITY: 4 REACTIVITY: 1

NFPA RATING

HEALTH: 3

FLAMMABILITY: 4 REACTIVITY: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Forms explosive mixtures in air. Container explosion may occur under fire conditions.

FLASH POINT

20 °F -7 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2 % Upper: 11.6 %

AUTOIGNITION TEMP

190 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam. Use water spray or fog nozzle to keep cylinder cool. Move cylinder away from fire if there is no risk.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Vapor may travel considerable distance to source of ignition and flash back. Emits toxic fumes under fire conditions. Flammable gas.

Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area and keep personnel upwind. Shut off all sources of ignition. Shut off leak if there is no risk.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe gas. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS

Contents under pressure. Moisture sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Government approved respirator. Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Туре	value
USA	ACGIH	STEL	15 PPM
USA	ACGIH	TWA	5 PPM

New Zealand OEL

Remarks: check ACGIH TLV

USA	NIOSH	TWA	10	PPM
		STEL	15	PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	12 mg/m3
Poland		NDSCh	24 mg/m3
Poland		NDSP	

Section 9 - Physical/Chemical Properties

Appearance	Physical	State:	Clear	liquid
11ppcarance	TITYDICAL	Duale	$c_{\perp}c_{\alpha}$	TTGGTG

Color: Colorless

Property	Value	At Temperature of	. D

Molecular Weight	59.11 AMU	
рН	N/A	
BP/BP Range	3 - 4 °C	760 mmHg
MP/MP Range	-117 °C	
Freezing Point	N/A	
Vapor Pressure	687.61 mmHg	21 °C
Managa Dangita	2 00 ~ /]	

Vapor Density 2.09 g/1

Saturated Vapor Conc. N/A

SG/Density 0.636 g/cm3

Bulk Density N/A

Odor Threshold N/AVolatile% N/AVOC Content N/AWater Content N/AN/ASolvent Content Evaporation Rate N/A Viscosity N/ASurface Tension N/APartition Coefficient N/A Decomposition Temp. N/A

20 °F -7 °C Method: closed cup Flash Point

Explosion Limits Lower: 2 %

Upper: 11.6 %

Flammability N/A190 °C Autoignition Temp Refractive Index 1.3443 Optical Rotation N/A Miscellaneous Data N/ASolubility N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Strong oxidizing agents, Brass, Magnesium, Zinc Copper, Copper alloys Mercury/mercury oxides., Tin/tin oxides

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled.

Ingestion: Harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA

Oral Rat 500 mg/kg

```
Inhalation
   Mouse
   19,000 \text{ mg/m}3
   LC50
   Remarks: Behavioral:Somnolence (general depressed activity).
   Behavioral: Excitement. Behavioral: Muscle contraction or
   spasticity.
   Intraperitoneal
   Mouse
   946 MG/KG
   T<sub>1</sub>D50
   Intravenous
   Mouse
   90 MG/KG
   LD50
   Inhalation
   Mammal
   19,000 \text{ mg/m}3
   LC50
CHRONIC EXPOSURE - TERATOGEN
   Species: Mouse
   Dose: 2960 MG/KG
   Route of Application: Intraperitoneal
   Exposure Time: (6-15D PREG)
   Result: Effects on Embryo or Fetus: Fetotoxicity (except death,
   e.g., stunted fetus).
CHRONIC EXPOSURE - REPRODUCTIVE HAZARD
   Species: Mouse
   Dose: 4430 MG/KG
   Route of Application: Intraperitoneal
   Exposure Time: (6-15D PREG)
   Result: Effects on Fertility: Litter size (e.g.; # fetuses per
   litter; measured before birth). Effects on Newborn: Physical.
Section 12 - Ecological Information
No data available.
Section 13 - Disposal Considerations
APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
   Contact a licensed professional waste disposal service to dispose
   of this material. Burn in a chemical incinerator equipped with an
   afterburner and scrubber but exert extra care in igniting as this
   material is highly flammable. Observe all federal, state, and
   local environmental regulations.
```

APPROPRIATE METHOD OF DISPOSAL OF CONTAMINATED PACKAGING Caution: no-return cylinder. Do not reuse. Empty cylinder will

contain hazardous residue. Follow proper disposal techniques.

Section 14 - Transport Information

DOT

Proper Shipping Name: Trimethylamine, anhydrous

UN#: 1083 Class: 2.1

Packing Group: None

Hazard Label: Flammable gas

PIH: Not PIH

IATA

Proper Shipping Name: Trimethylamine, anhydrous

IATA UN Number: 1083 Hazard Class: 2.1

Not Allowed - Aircraft: Cargo aircraft only. Not

permitted on passenger aircraft.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F+ Xn

Indication of Danger: Extremely Flammable. Harmful.

R: 12 20 37/38 41

Risk Statements: Extremely flammable. Harmful by inhalation. Irritating to respiratory system and skin. Risk of serious damage to eyes.

S: 16 26 29

Safety Statements: Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Extremely Flammable (EU). Corrosive.

Risk Statements: Extremely flammable. Harmful by inhalation and if swallowed. Causes burns. Risk of serious damage to eyes. Safety Statements: Keep away from sources of ignition - no smoking. Do not breath gas. Do not empty into drains. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). US Statements: Lachrymator.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to

appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.