



DENDRITECH, INC.

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www.Dendritech.com

In case of a Chemical Emergency involving a spill, leak, fire, exposure or accident contact Chemtrec® at 1-800-424-9300

-----SECTION I - PREPARATION/PRODUCT INFORMATION-----

Producer's Name: Dendritech® Inc.
3110 Schuette Drive
Midland, MI 48642
(989)496-2016

Revision Date: April 30, 2003
Preparation Date: February, 1994

Product Name: Polyamidoamine (PAMAM) Dendrimer (***METHANOL SOLUTION***)

-----SECTION II - INGREDIENTS-----

INGREDIENTS	CAS#	%	ACGIH TLV	OSHA PEL	CARCINOGEN LIST			SARA 313
					IARC	NTP	OSHA	
HAZARDOUS INGREDIENTS-								
Methanol	67-56-1	85-50%	200ppm	200ppm	NO	NO	NO	YES
NON-HAZARDOUS INGREDIENTS								
Polyamidoamine	26937-01-9	15-50%	NONE	NONE	NO	NO	NO	NO

HMIS Rating: Health=1, Flammability=3, Reactivity=0, Protection=B

-----SECTION III - PHYSICAL & CHEMICAL DATA-----

Note: Properties based on methanol unless otherwise indicated.

Boiling Pt.- 65°C

Solubility in Water -*Very Soluble

Vapor Pressure- 92mm Hg (20°C)

Vapor Density- 1.11

Evaporation Rate- 4.6 (butyl acetate = 1)

Appearance-*Clear, Slightly Yellow,
Viscous Fluid

Odor*- Alcohol smell

Melting/Softening Pt.: -98°C

Odor Threshold- methanol ~200 ppm

pH - Dendrimers have an alkaline
(~10) pH

Decomposition Temperature - Not Available

*Based on Dendrimer in Methanol

-----SECTION IV - FIRE AND EXPLOSION HAZARD-----

NOTE: BASED ON METHANOL

Fire or Explosion Hazards - Fire hazard when exposed to heat or flame. Vapors can travel considerable distance to ignition source and flash back.

Flash Pt.- 11°C (52°F)

Special Fire Fighting Procedures -
Use self contained breathing system

Extinguishing: Carbon Dioxide, foam, dry chemical.

Explosion limits in air:

Lower: 6%

Upper: 36%

Hazardous Combustion Products - May produce irritant fumes

Auto Ignition Temperature- 385°C (725°F)

-----SECTION V - REACTIVITY DATA-----

Stability - Stable under normal temperatures and pressures

Hazardous Decomposition Products - Carbon oxides; nitrogen oxides

Conditions to Avoid - contact with heat, flames, sparks. Poisonous; avoid vapor inhalation and skin contact, use in ventilated area. Prolonged storage above normal room temperature can lead to some deterioration in product quality, but hazardous decomposition does not occur.

Hazardous Polymerization - Does not Occur

Incompatibility – Alkali metals, oxidizing agents, inorganic acids, aldehydes, halogens, halogenated compounds, acid anhydrides, and acrylates. Avoid contact with copper, brass, or other copper alloys to prevent reaction with dendrimer (amines).

-----SECTION VI - HEALTH HAZARD DATA/TOXICOLOGICAL PROPERTIES-----

Hazards to Humans-

Methanol is flammable. Skin contact and inhalation are primary routes of exposure, which could occur during handling. OSHA TWA is 200ppm (262mg/m³) for methanol.

Test Data- (See component information)

Methanol:

LD₅₀ Oral/Rats = 5600mg/kg. Essentially non - toxic
LD₅₀ Dermal/Rabbits = 15800 ml/kg. Slightly toxic
LC₅₀ 4 hrs Inhalation/Rats = 64,000ppm. Essentially non-toxic.
Irritating to skin, may defat skin.
Slightly irritating to eyes.

Dendrimer:

LD₅₀ Oral/Rats: > 2500 mg/kg. Slightly Toxic
LD₅₀ Dermal/Rabbits: > 1000 mg/kg. Moderately toxic.
Skin Irritation: Slight Irritant
Eye Irritation: Essentially non-irritating

Additional Information.-

A) Methanol

Methanol is generally non-mutagenic and not a sensitizer. Teratogenic effects in animals have been reported at high dose (maternally toxic). Poisonous to humans. Ingestion by humans may cause central nervous system depression, metabolic acidosis, and blindness if not treated. Methanol may be absorbed through the skin and cause central nervous system effects. Inhalation above TWA may cause headaches, dizziness, anesthetic effects and respiratory tract irritation.

B) Dendrimer

Mutagenicity: Negative, an aqueous dendrimer solution is not a bacterial mutagen by the Ames test.

Skin sensitization: Using a modified Buehler technique, neutralized aqueous solutions (pH=7) of dendrimer showed no sensitization reactions in guinea pigs under test conditions.

-----SECTION VII - EMERGENCY/FIRST AID PROCEDURE-----

Inhalation- Remove to fresh air immediately. Support breathing if necessary and contact a physician.

Skin- Promptly wash skin with copious amount of water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical attention.

Eyes- Flush eyes with large quantities of water for at least 15 minutes. Seek medical attention.

Ingestion-Seek immediate medical attention. Can be fatal if swallowed.

-----**SECTION VIII - SAFE HANDLING/PREVENTATIVE MEASURES**-----

Personal Protective Equipment - Chemical workers rubber gloves, safety glasses, adequate ventilation. Additional protective clothing, goggles, and respirator are required for large leaks, spills, or where gross contact is likely.

Ventilation - Provide general dilution ventilation to meet exposure limits. Ventilation equipment must be explosion proof.

Waste Disposal - Incineration is recommended. Comply with all federal, state, and local laws.

Procedures for Leaks or Spills - Soak up with inert absorbent material (e.g. sand, silica gel, clay). Place in suitable containers for disposal by incineration. After cleaning, flush area with water.

Storage requirements - Keep away from heat, flame and sparks. Ensure proper grounding of storage tanks (static sparks). To maintain product quality, store at room temperature. For prolonged storage, refrigeration(5-10°C) under a nitrogen pad recommended.

Labeling: Flammable liquid and poison.

-----**SECTION IX - TRANSPORTATION REQUIREMENTS**-----

Proper Shipping Name - PAMAM dendrimer in Methanol Hazard class - 3.2/6.1

Identification Number - 1230

Reportable Quantity - 5000lbs.

Packing Group - II (US dept. of Transportation)

International Air Transportation Association (IATA) requirements: Flammable Liquid, Poison WHMIS B-2, D-1A

-----**SECTION X – OTHER INFORMATION**-----

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Dendritech, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

