

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION
1.1 Product identifier
Product name: Melamine

Product code: Melamine

Synonym(s): 2,4,6-Triamino-1,3,5-triazine; Aero; Cyanuramide; Cyanurotriamide; Cyanurotriamine; Cymel; Isomelamine

1.2 Relevant identified uses of the substance or mixture and uses advised against
General use: Used in the manufacture of resins and resin-based laminates, wood-based panels, coatings, molding powders, paints, adhesives, plastics, concrete plasticizers and flame retardants

Uses advised against: None specified

1.3 Details of the supplier and of the safety data sheet
Manufacturer/Distributor

 Methanol Holdings (Trinidad) Limited
 Atlantic Avenue, Point Lisas Industrial Estate
 Point Lisas, Trinidad, West Indies
 +1-868-636-PRMN (7766)

Non-Emergency Contact
North America: HELM U.S. Corporation, +1 (281) 623-0120

Europe: Helm AG, 011-19-40-23750

Trinidad: Methanol Holdings (Trinidad) Limited, +1-868-636-2906

1.4 Emergency telephone number
North America Chemtrec: +1-800-424-9300

Europe Giftinformationszentrum Nord: 011-49-551-19240

Trinidad Proman Trinidad Headquarters: +1 (868)-636-7766

SECTION 2 - HAZARDS IDENTIFICATION
2.1 Classification of substance or mixture
Product definition: Substance

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008

Not a hazardous substance or mixture according to OSHA or to European Union Legislation

2.2 Label elements

Not a dangerous substance or mixture according to GHS.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form combustible dust concentrations in air.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS
3.1 Substances

% by Volume	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
>99	Melamine	108-78-1	203-615-4	603-001-00-X	H225, H301, H311, H331, H370

To the best of our knowledge there are no additional ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 - FIRST AID MEASURES
4.1 Description of first aid measures
Inhalation: If product dust causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

Eyes: DO NOT RUB EYES. Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

Ingestion: Rinse mouth with water if the victim is conscious. Remove dentures if present. Give 1 - 2 glasses of water or milk to drink if the victim is conscious, alert, able to swallow and not experiencing respiratory distress. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of vomit into the lungs, lay the victim on one side with the head lower than the waist.

Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: May cause eye irritation characterized by redness, pain, tearing and swelling. May cause mechanical irritation and inflammation of the cornea and surrounding tissues.

Skin: May cause skin irritation. Prolonged and repeated exposure to unprotected skin may cause dermatitis or aggravate existing skin disorders.

Inhalation: Inhalation of dust may be irritating to mucous membranes and to the respiratory system. Inhalation of decomposition products may cause severe injury or death. Harmful if inhaled.

Ingestion: May cause irritation of the digestive tract with nausea, vomiting, abdominal pain and diarrhea. May be harmful if swallowed.

Chronic: Individuals with pre-existing skin, eye and respiratory disorders may be more susceptible to the effects of this product. Prolonged exposure may cause urinary bladder stones, diuresis and crystalluria. Kidney injury may occur. This substance has caused adverse reproductive and fetal effects in laboratory animals. Refer to Section 11.2.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel

Treat symptomatically and supportively.

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable methods of extinction: Use extinguishing media suitable for the surrounding fire.

Unsuitable methods of extinction: No limitations of extinguishing agents are given for this material.

5.2 Special hazards arising from the substance or mixture

May form combustible dust clouds in air. Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: Avoid high temperatures, sources of ignition and hot surfaces. This material forms explosive mixtures with air on intense heating. Avoid dust generation and accumulation. When suspended in air dust can pose an explosion hazard.

5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Avoid dust generation and accumulation. DO NOT inhale dust. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT flush spill down the drain. Cover drains and contain spill. Carefully collect material using non-sparking tools and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of in accordance with national, state and local regulations.

6.4 Reference to other sections

See Section 13 for additional waste treatment information.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. DO NOT inhale dust. NO SMOKING. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes before reuse.

Advice on protection against fire and explosion

Keep away from heat and sources of ignition. Forms explosive mixtures with air on intense heating. Avoid dust generation and accumulation. Forms combustible dust clouds in air.

7.2 Conditions for safe storage, including any incompatibilities

Store in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Keep away from heat and ignition sources. Transfer only to approved containers having correct labeling. Keep containers tightly closed when not in use. Protect containers against

physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent spillage. Containers are hazardous when empty as they contain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep locked up and out of reach of children.

DO NOT STACK MORE THAN 2 SUPERSACKS HIGH.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear protective splash goggles or safety glasses with unperforated side shields during use.

Hand protection: Wear Nitrile rubber gloves or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Skin protection: Wear protective clothing, if needed. Wear protective boots if the situation requires.

Respiratory protection: Wear a dust mask when handling this product if dust generation is problematic. Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.



Safety Glasses



Gloves



Protective Apron



Dust Respirator

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	White powder
Odor	Odorless
Odor Threshold	No data available
Molecular Weight	126.12 g/mol
Chemical Formula	C ₃ H ₆ N ₆
pH	7 - 8 @ 20 °C (0.32% aqueous solution)
Melting Point	>300 °C (>572 °F)
Boiling Point Range	>350 °C (>662 °F), sublimates
Evaporation Rate	Not applicable
Flammability (solid, gas)	May form combustible dust concentrations in air
Flash Point	300 °C (572 °F), closed cup
Autoignition Temperature	>600 °C (1,112 °F)
Decomposition Temperature	>350 °C (>662 °F)
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	67 mbar @ 315 °C
Vapor Density	No data available
Density	1.57 g/cc @ 20 °C
Bulk Density	550 - 750 kg/m ³ (34.34 - 46.82 lb/ft ³)
Viscosity	No data available
Solubility in Water	3 - 5 g/l @ 20 °C [approximate]

Partition Coefficient (n-octanol/water)	log P _{ow} = -1.22 @ 20 °C
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 °C	No data available

9.2 Other Data

No data available

SECTION 10 - STABILITY AND REACTIVITY

10.1 Reactivity

This material is stable under normal handling conditions and use.

10.2 Chemical Stability

This material is stable under recommended storage and handling conditions.

10.3 Possibility of hazardous reactions

When heated to decomposition cyanide fumes are released. Forms explosive mixtures with air on intense heating. May form combustible dust clouds in air. Hazardous polymerization will not occur.

10.4 Conditions to avoid

Avoid strong heating, high temperatures (>300 °C), sources of ignition, hot surfaces and contact with incompatible materials. Avoid dust generation and accumulation.

10.5 Incompatible materials

Strong oxidizing agents, strong organic acids

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon, nitrogen oxides, ammonia, cyanide, toxic fumes and gases.

SECTION 11 - TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

LD₅₀, rat: 3,161 mg/kg

Acute inhalation toxicity

LC₅₀, rat: >5,190 mg/m³, 4 h

Acute dermal toxicity

LD₅₀, rabbit: >1,100 mg/kg

Skin irritation

May cause skin irritation.

Eye irritation

May cause eye irritation.

Sensitization

No data available

Carcinogenicity

No data available

Germ cell mutagenicity

No data available

Reproductive toxicity

No data available

Specific organ toxicity - single exposure

No data available

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further information

Melamine (CAS #108-78-1): IARC, Group 3 carcinogen: *Not classifiable as to its carcinogenicity to humans*. Not listed as a carcinogen by ACGIH, OSHA or NTP.

No specific data is available regarding the mutagenicity or teratogenicity of this material, nor is there any data that indicates it causes adverse developmental or fertility effects in humans. This substance has caused adverse reproductive and fetal effects in laboratory animals. Indications of possible carcinogenic effects in animal studies are available.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Large spills or discharges of this material may be harmful to aquatic life and the environment.

Acute toxicity to fish:	LC ₅₀ - Poecilia reticulata (Guppy), 96 h: >3,000 mg/m ³
Acute toxicity aquatic invertebrates:	EC ₅₀ - Daphnia magna (Water flea), static test, 48 h: 48 mg/l
Acute toxicity aquatic plants:	EC ₅₀ - Scenedesmus pannonicus (Freshwater algae), 4 d: 940 mg/m ³
Acute toxicity bacteria:	EC ₅₀ - Pseudomonas putida (Bacteria), 30 min: >10,000 g/m ³

12.2 Persistence and degradability

This material is not readily biodegradable.

12.3 Bioaccumulation potential

This substance is not expected to bioaccumulate.

12.4 Mobility in soil

The mobility of this substance in water is expected to be very high.

12.5 Results of PBT and vPvB assessment

This material is not considered to be persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

12.6 Other effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should always comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA F-Series: No listings above the reportable threshold (de minimis)

RCRA U-Series: No listings above the reportable threshold (de minimis)

SECTION 14 - TRANSPORT INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

USA DOT (Ground Transportation)	NOT REGULATED FOR TRANSPORT (not dangerous goods)
IMO/IMDG (Water Transportation)	NOT REGULATED FOR TRANSPORT (not dangerous goods)
ICAO/IATA (Air Transportation)	NOT REGULATED FOR TRANSPORT (not dangerous goods)
RID/ADR (Rail Transportation)	NOT REGULATED FOR TRANSPORT (not dangerous goods)

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

OSHA Process Safety Management Standard: This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

Toxic Substance Control Act (TSCA) Inventory: All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number
Not listed

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: Not listed

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: Not listed

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: May form combustible dust concentrations in air (HNOC)

SARA 313 Information: None of the components of this product are subject to the reporting levels established by Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the components of the product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the components of the product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): None of the components of this product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

Clean Air Act (CAA)

This product does not contain any Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 Ozone depleters.

This product does not contain Class 2 Ozone depleters.

Clean Water Act (CWA)

This product does not contain Hazardous Substances.

This product does not contain Priority Pollutants.

This product does not contain Toxic Pollutants.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

Other U.S. State Inventories

Melamine (CAS #108-78-1) is listed on the following State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists: MN, NY, PA.

Canada

WHMIS Hazard Classification: Combustible dust

Canadian National Pollutant Release Inventory (NPRI): None of the substances in this product are listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): 1 (slightly hazardous to water)

Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product comply with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	1
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	F

F = safety glasses, gloves, apron & dust mask

HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

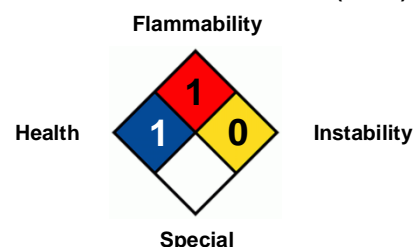
* = Chronic Health Hazard

NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists	LD_{Lo}	Lowest Lethal Dose
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	mppcf	Millions of Particles Per Cubic Foot
CAS	Chemical Abstract Services	NA	North America
CFR	Code of Federal Regulations	NAERG	North American Emergency Response Guidebook
COC	Cleveland Open Cup	NIOSH	National Institute for Occupational Safety & Health
DOT	Department of Transportation	NTP	National Toxicology Program
EC₅₀	Half maximal effective concentration	OSHA	Occupational Safety and Health Administration
EMS	Emergency Response Procedures for Ships Carrying	PBT	Persistent, Bioaccumulating and Toxic
EPA	Environmental Protection Agency	PEL	Permissible exposure limit
ErC₅₀	Reduction of Growth Rate	PMCC	Pensky-Martens Closed Cup
ERG	Emergency Response Guidebook	ppm	Parts Per Million
FDA	Food and Drug Administration	RCRA	Resource Conservation and Recovery Act
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	RID	Dangerous Goods by Rail
HCS	Hazard Communication Standard	RQ	Reportable Quantity
IARC	International Agency for Research on Cancer	TCC/Tag	Tagliabue Closed Cup
IATA	International Air Transport Association	TLV	Threshold Limit Value
IC₅₀	Half Maximal Inhibitory Concentration	TSCA	Toxic Substance Control Act
ICAO	International Civil Aviation Organization	TWA	Time-weighted Average
IDLH	Immediately Dangerous to Life and Health	UN	United Nations
IMDG	International Maritime Dangerous Goods	VOC	Volatile Organic Compounds
IMO	International Maritime Organization	vPvB	Very Persistent and Very Bioaccumulating
LC₅₀	50% Lethal Concentration	WHMIS	Workplace Hazardous Materials Information System
LD₅₀	50% Lethal Dose		

DISCLAIMER OF RESPONSIBILITY

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