SAFETY DATA SHEET
MELAMINE

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier
Product name: Melamine

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

1.3 Details of the supplier and of the safety data sheet
Distributed by: Southern Chemical Corporation
2 Northpoint Drive
Houston, Texas 77060
+1-832-448-7100

Manufactured by: Methanol Holdings (Trinidad) Limited
Atlantic Avenue, Point Lisas Industrial Estate
Point Lisas, Trinidad, West Indies
+1-868-636-2906/9

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

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture
Product definition: Substance
Classification (Regulation (EC) No 1272/2008)
Not a hazardous substance according to (EC) No. 1272/2008.

2.2 Label Elements
Labeling (Regulation (EC) No 1272/2008)
Hazard Symbol(s): None allocated
Signal Word: None allocated
Precautionary Statement(s): None allocated

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>% by Weight</th>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EC Number</th>
<th>Index Number</th>
<th>EC Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;99</td>
<td>Melamine</td>
<td>108-78-1</td>
<td>203-615-4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

3.2 Mixtures
Chemical characterization (preparation)
Not applicable

SECTION 4 - FIRST AID MEASURES

4.1 Description of first aid measures
In all cases of doubt, or when symptoms persist, seek medical attention.

Inhalation: If product vapor or fumes 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. Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist, seek medical attention immediately.

Eyes: Immediately flush eyes with large amounts of water for 15 minutes. Remove contact lenses after the first 5 minutes and continue rinsing, lifting upper and lower eyelids occasionally. Obtain immediate medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Wash affected area with soap and water. Wash contaminated clothing and shoes thoroughly before reuse. Seek prompt medical attention if irritation persists.

Ingestion: Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. If conscious and alert, give 2 to 4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed
Potential health symptoms and effects
Eyes: May cause eye irritation characterized by redness, burning sensation, tearing, swelling and inflammation. May cause mechanical irritation and corneal injury from abrasion.
Skin: May cause skin irritation. Harmful if absorbed through skin. May cause dermatitis.

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

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.

Chronic: Other symptoms of prolonged and repeated exposure include urinary bladder stones, diuresis and crystalluria. Dermatitis has been reported. Kidney injury may occur. This substance has caused adverse reproductive and fetal effects in laboratory animals. Refer to Section 12.

4.3 Indication of any immediate medical attention and special treatment needed
Advice to Doctor/Physician and Hospital Personnel: No data available

SECTION 5 - FIRE FIGHTING MEASURES

5.1 Extinguishable media
Suitable methods of extinction: Use media such as water fog, water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable methods of extinction: None known

5.2 Special hazards arising from the substance or mixture
During a fire, irritating and highly toxic gases including ammonia, cyanide and oxides of carbon are generated by thermal decomposition or combustion. Symptoms of overexposure to these gases may not be apparent. Seek medical advice.

5.3 Advice for firefighters
Responders should stay upwind. Full protective equipment including self-contained breathing apparatus should be used (HAZMAT suits). Water may be used to cool closed containers to prevent pressure build-up and possible auto ignition or explosion when exposed to extreme heat. If possible, firefighters should control run-off water to prevent environmental contamination.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear appropriate protective clothing designated in Section 8. Remove all sources of ignition. Ventilate the area. Keep unnecessary and unprotected personnel from entering the hazard area.

6.2 Environmental precautions
Do not flush to sewer. Avoid dispersal of spilled material or run-off 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. Vacuum or sweep up material and place into a suitable disposal container. Avoid the generation of dust and prevent wind dispersal. Do NOT flush spilled material to the sewer. Clean contaminated area with soap and water.

6.4 Reference to other sections
For indications about waste treatment, see Section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling
Handle in a manner that minimizes dust generation. Avoid contact with skin and eyes. Avoid inhalation of dust. Keep away from sources of ignition, No smoking. Wear all appropriate protective equipment specified in Section 8. Wash hands thoroughly after handling. Remove contaminated clothing and wash before reuse. Keep containers closed when not in use.

Advice on protection against fire and explosion
This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. Risk of explosion is heated under confinement. Keep away from sources of ignition.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool, dry, well-ventilated storage areas in closed containers. Keep away from oxidizers and acids.

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 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 using explosion proof ventilation equipment. Local exhaust is preferable. Use only under a chemical fume hood. 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 or using the lavatory.
**Eye/face protection:** Wear protective chemical goggles and a face shield. Refer to 29 CFR 1910.133, ANSI Z87.1 or European Standard EN 166.

**Hand Protection:** Wear rubber (butyl or nitrile) or neoprene gloves 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.

**Other protective equipment:** Protective clothing. Protective boots, if the situation requires.

**Respiratory Protection:** Always use an approved respirator when vapor/fumes/dust are generated. Where risk assessment shows air-purifying respirators are appropriate use a full-faced 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).

**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.

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>white powder</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
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<tr>
<td>Molecular Weight</td>
<td>126.12</td>
</tr>
<tr>
<td>Chemical Formula</td>
<td>C3H6N6</td>
</tr>
<tr>
<td>pH</td>
<td>7 - 8 @ 20°C (concentration 3.2 g/l)</td>
</tr>
<tr>
<td>Freezing/Melting Point, Range</td>
<td>&gt;300°C (572°F)</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Sublimates at temperatures above 350°C (662°F)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>no data available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>300°C (572°F) - closed cup</td>
</tr>
<tr>
<td>Auto Ignition Temperature</td>
<td>&gt;600°C (1,112°F)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>&gt;300°C (572°F)</td>
</tr>
<tr>
<td>Lower Explosive Limit (LEL)</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper Explosive Limit (UEL)</td>
<td>no data available</td>
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<tr>
<td>Vapor Pressure</td>
<td>67 mbar @ 315°C</td>
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<tr>
<td>Vapor Density</td>
<td>not determined</td>
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<tr>
<td>Density</td>
<td>1.57 g/cc (0.058 lb/in3) @ 20°C</td>
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<tr>
<td>Bulk Density</td>
<td>550 - 750 kg/m3 (34.34 - 46.82 lb/ft3)</td>
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<tr>
<td>Solubility in Water</td>
<td>~3 - 5 g/l @ 20°C</td>
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<tr>
<td>Partition Coefficient: n-octanol/water</td>
<td>-1.14</td>
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<tr>
<td>Viscosity</td>
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<tr>
<td>Volatiles by Volume @ 70* F</td>
<td>not determined</td>
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</tbody>
</table>

9.2 Other data

No data available

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**SECTION 10 - STABILITY AND REACTIVITY**

10.1 Reactivity

No special reactivity has been reported.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

When heated to decomposition cyanide fumes are released.

10.4 Conditions to avoid

Dust generation excess heat, temperatures above 300°C

10.5 Incompatible materials

Avoid contact with strong oxidizing agents, strong acids.

10.6 Hazardous decomposition products

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

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

11.1 Information on toxicological effects

**Acute Oral Toxicity**

LD50, Mouse: 3,296 mg/kg

LD50, Rat: 3,161 mg/kg
Acute inhalation toxicity  
LC50, Rat: 3,248 mg/m³

Acute dermal toxicity  
LD50, Rabbit: >1,000 g/kg

Skin irritation  
May cause skin irritation. Prolonged and repeated contact may cause dermatitis.

Eye irritation  
May cause eye irritation.

Sensitization  
No data available

Genotoxicity  
No data available

Mutagenicity  
No data available

Specific organ toxicity - single exposure  
May cause drowsiness or dizziness.

Specific organ toxicity - repeated exposure  
Prolonged and repeated exposure to skin may cause defatting of skin and dermatitis.

Aspiration hazard  
No data available

11.2 Further information

Chronic/Carcinogenicity:  
Melamine is classified as a Group 3 carcinogen by IARC: Not classifiable as to its carcinogenicity to humans. It is not listed as a carcinogen by ACIGH, OSHA or NTP. No specific data is available regarding the mutagenicity and or teratogenicity of this material, nor is there any data that indicates it causes adverse developmental and/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

Acute and prolonged toxicity to fish:  
LC50 - Poecillia reticulate (Guppy), 96 h: >3,000 mg/m³

Toxicity to aquatic invertebrates:  
EC50 - Daphnia magna (Water flea), 48 h: 2,000 mg/m³

Toxicity to aquatic plants:  
EC50 - Scenedesmus pannonicus (Freshwater algae), 4 d: 940 g/m³

Toxicity to micro-organisms:  
EC50 - Pseudomonas putida (Bacteria), 30 min: >10,000 g/m³

12.2 Persistence and degradability

No biodegradation using a standard 5 day BOD test was observed, suggesting that biodegradation may not be an important environmental fate process. Adapted waste water treatment plants can degrade melamine effectively.

Volatilization from moist soil surfaces is not expected to be an important fate process. If released to water, melamine is not expected to absorb to suspended solids and sediment based on the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process. Particulate-phase melamine will be removed from the atmosphere by wet or dry deposition.

12.3 Bioaccumulation potential

Melamine is not expected to bioaccumulate (log Pow = -1.14)

12.4 Mobility in soil

Mobility in soil is expected to be very high based on an estimated Koc of 5.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Additional ecological information

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

SECTION 13 - DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residue. 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 at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste: The classification of this product may meet the criteria for a hazardous waste.

RCRA P-Series: No listing

RCRA U-Series: No listing
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) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

This material is not regulated for transport.

Marine Pollutant: No

SECTION 15 - REGULATORY INFORMATION

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

U. S. Federal Regulations


TSCA Status: All components of this product are listed on the Toxic Substance Control Act (TSCA) Inventory.

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Chronic Health Hazard

SARA 313 Information: None of the chemicals in this product exceed the threshold (de minimis) reporting levels established by Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance:
No 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:
No 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): Melamine is not a CERCLA reportable material.

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 any Class 1 Ozone depleters.

This product does not contain any Class 2 Ozone depleters.

Clean Water Act (CWA)

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

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 or other reproductive harm.

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: MA, PA.

Canada

WHMIS Hazard Symbol and Classification: None allocated

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

Canadian Ingredient Disclosure List (IDL): Melamine is listed on the IDL.

Canadian National Pollutant Release Inventory (NPRI): This material is not listed on the NPRI.

European Economic Community

Classification (67/548/EEC to 1999/45/EC)
Not a hazardous substance according to EC directives 67/548/EEC or 1999/45/EC.

This product does not need to be labeled in accordance with EC directives or respective national laws.

WGK, Germany (Water danger/protection): 1

Chemical inventory Lists

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory Name</th>
<th>Inventory Listing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada:</td>
<td>Domestic Substance List (DSL).</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada:</td>
<td>Non-Domestic Substance List (NDSL).</td>
<td>No</td>
</tr>
<tr>
<td>Europe:</td>
<td>Inventory of New and Existing Chemicals (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States:</td>
<td>Toxic Substance Control Act (TSCA)</td>
<td>Yes</td>
</tr>
<tr>
<td>Australia:</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand:</td>
<td>New Zealand Inventory of Chemicals (NZIoC)</td>
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<tr>
<td>China:</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
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<tr>
<td>Japan:</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
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<tr>
<td>Korea:</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
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<tr>
<td>Philippines:</td>
<td>Philippines Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* "Yes" indicates that all components of this product are in compliance with the inventory requirements administered by the governing country.

* "No" indicates that one or more components of this product are not on the inventory and are not exempt from listing.
The information and recommendations herein are taken from data contained in independent industry-recognized references and are believed to be accurate and represent the best information currently available to us. Southern Chemical Corporation makes no representation or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Users should conduct their own investigations to determine the suitability of the information to their particular purpose. Accordingly, Southern Chemical Corporation will not be responsible for loss or damages resulting from use of or reliance upon this information.