



## SAFETY DATA SHEET

Conforms to ISO 11014-1:1994 (E) and 91/155/EEC



### Melamine

Issue date : July 1, 2002  
Version : 4

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#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Chemical product name** : Melamine  
**Common chemical name** : 2,4,6-triamino-1,3,5-triazine  
**Chemical formula** :  $C_3H_6N_6$   
**CAS no** : 108-78-1  
**EINECS no** : 203-615-4

**Supplier's name and address**

DSM Melamine Americas, Inc  
 P.O. Box 327  
 Addis, Louisiana 70710-0327  
 USA  
 Tel: +1 225 685 3020  
 Fax: +1 225 685 3003

DSM Melamine Europe  
 P.O. Box 43  
 6130 AA Sittard  
 The Netherlands  
 Tel: + 31 46 4773854  
 Fax: + 31 46 4773049

P.T. DSM Kaltim Melamine  
 P.O. Box 4834 JKTM  
 Jakarta 12510  
 Indonesia  
 Tel: + 62 21 7984261  
 Fax: + 62 21 7984266  
 Telex 66075 DKM Jkt I A

**Emergency telephone** : + 31 46 4765555

**Emergency telefax** : + 31 46 4766440

**Transport emergencies for North and South America:** CHEMTREC, + 1 800 424 9300

#### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name of substance	CAS no.	% (w/w)	Symbol	R phr- ases
2,4,6-triamino-1,3,5-triazine	108-78-1	> 99.8	none	none
<b>Impurities contributing to the hazard:</b>		Not applicable		

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### 3. HAZARDS IDENTIFICATION

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- Physical/chemical hazards** : None.
- Environmental hazards** : The final product in its current form is not considered by the United States Environmental Protection Agency as hazardous under 40 CFR part 266.
- Effect(s) of (over)exposure:** : Above threshold limit value of 10 mg/m<sup>3</sup>, irritating to nose, throat, and respiratory tract. Mildly irritating to eyes.
- Symptom(s) of (over)exposure**
- Inhalation** : Irritating.
  - Ingestion** : > 10 g may result in abdominal pain.
  - Skin contact** : Not irritating.
  - Eye contact** : Redness, pain.

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### 4. FIRST AID MEASURES

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- Ingestion** : Rinse mouth with plenty of water. Consult a doctor in event of complaints.
- Inhalation** : Remove victim to fresh air. Consult a doctor in event of complaints.
- Skin contact** : Wash off with water and soap.
- Eye contact** : Wash out with plenty of water. Consult a doctor in event of complaints.

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### 5. FIRE FIGHTING MEASURES

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#### Extinguishing media

**Suitable** : Melamine is non-combustible, use water to cool. In case of fire in immediate vicinity: use any extinguishing agent

**Unusual fire and explosion hazards:** Melamine is non-combustible. It can however, decompose, emitting toxic vapors when exposed to high temperatures.

**Protection of firefighters** : Self-contained breathing equipment.

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### 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions** : As mentioned under heading 8.

**Environmental precautions** : Not applicable.

**Methods for cleaning up** : Collect spilled material in sealable containers. Disposal according to local, provincial, and federal regulations.

**Remarks** : Prevent formation of melamine dust.

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### 7. HANDLING AND STORAGE

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#### Handling

**Technical measures** : Provide mechanical or natural ventilation to maintain nuisance dust concentrations within acceptable levels.

**Safe handling advice** : Avoid eye contact. Avoid breathing dust.

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### Storage

- Technical measures** : Do not stack more than two bulk-bags > 1000 kg on top of each other because of tear risk.
- Storage conditions** : Store away from highly flammable substances. Keep in a dry place.
- Incompatible products** : None.

### Packaging materials

- Recommended** : No special precautions.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Engineering measures** : Ventilation recommended to minimize dust exposure.

**Hygienic measures** : When using do not eat, drink or smoke.

### Personal protection

**Respiratory system** : Exposure to high concentrations: dust mask.

**Skin and body** : Not applicable.

**Hands** : Not applicable.

**Eyes** : Safety goggles.

**Occupational exposure limits** : Workplace Environmental Exposure Level (WEEL):  
10 mg/m<sup>3</sup> inhalable fraction,  
5 mg/m<sup>3</sup> respirable fraction.  
This 8 hour Time Weight Average (TWA) was established by the WEEL committee of the American Industrial Hygiene Association (AIHA). Ballot passed on March 6, 1998.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>Appearance</b>	: Crystalline powder
<b>Color</b>	: White
<b>Odor</b>	: Odorless
<b>Molecular weight</b>	: 126.13
<b>Melting point</b>	: 354 <sup>0</sup> C
<b>Boiling point</b>	: sublimes
<b>Decomposition temperature</b>	: 354 <sup>0</sup> C
<b>Density</b>	: 1573 kg/m <sup>3</sup> (20 <sup>0</sup> C)
<b>Solubility in water</b>	: 3 g/ l (20 <sup>0</sup> C)
<b>pH (10 % slurry in water)</b>	: typically 8.4 to 8.9
<b>Flash point</b>	: > 280 <sup>0</sup> C
<b>Auto ignition temperature</b>	: 658 <sup>0</sup> C
<b>Dust explosion class according to VDI 3673</b>	: St. 1
<b>Ignition energy</b>	: > 1000 mJ (20 <sup>0</sup> C)

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### 10. STABILITY AND REACTIVITY

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- Stability** : Stable under normal storage conditions.
- Conditions to avoid** : Avoid temperatures above 300<sup>0</sup> C.
- Hazardous decomposition products:** Melamine is stable under normal conditions. It can however decompose, emitting toxic vapors when exposed to high temperatures.
- Hazardous reactions** : Will not occur.

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### 11. TOXICOLOGICAL INFORMATION

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#### Acute toxicity

- Oral** : LD<sub>50</sub> male rat: 3,100 mg/kg  
LD<sub>50</sub> female rat: 3,800 mg/kg  
LD<sub>50</sub> male mouse: 3,300 mg/kg  
LD<sub>50</sub> female mouse: 7,000 mg/kg

**Eye irritation** : Mildly irritating.

**Skin irritation** : Not irritating.

**Sensitization** : Not sensitizing.

**Chronic toxicity** : No relevant chronic toxicity.

**Carcinogenicity** : The International Agency for Research on Cancer labeled melamine as not classifiable as to its carcinogenicity in humans (class 3).

**Mutagenicity** : Not mutagenic.

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### 12. ECOLOGICAL INFORMATION

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- Mobility** : Adsorption on soil is not expected.
- Persistence and degradability** : The substance is not readily biodegradable. It is however inherently biodegradable.
- Ecotoxicity** : Melamine has been shown to have low toxicity to aquatic life.
- 96 h LC<sub>50</sub> (for fish): > 3,000 mg/l  
(= solubility melamine in water)  
NOEC fish chronic test: > 1,000 mg/l  
48 h LC<sub>50</sub> (for Daphnia): > 2,000 mg/l  
NOEC Daphnia magna 21 days: 18 mg/l  
EC<sub>50</sub> Algae: 940 mg/l  
NOEC Algae: 320 mg/l  
EC<sub>50</sub> bacteria: > 10,000 mg/l

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### 13. DISPOSAL CONSIDERATIONS

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**Responsibility of the receiver to have knowledge of national and local regulations.**

- Methods of disposal** : Please comply with all local, provincial, and federal regulations.

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### 14. TRANSPORT INFORMATION

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- Land - Road/Railway** : Not restricted.
- Inland waterways** : Not restricted.
- Sea** : Not restricted.
- Air** : Not restricted.

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### 15. REGULATORY INFORMATION

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**Responsibility of the receiver to have knowledge of national and local regulations.**

#### EC Classification

**Label name** : Not classified as a dangerous substance according to EC criteria.

**Hazard symbol** : None.

**Risk phrases** : None.

**Safety phrases** : None.

#### HMIS rating:

**Health** : 1

**Flammability** : 0

**Reactivity** : 0

**WHMIS class** : D2B

#### National regulations

**WGK (Germany)** : 1

**Listed on TSCA-inventory** : Yes

**Listed on DSL-inventory** : Yes

**Listed on AICS-inventory** : Yes

**Listed on MITI-inventory** : Yes

**Listed on ECL-inventory** : Yes, number 3-2801

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### 16. OTHER INFORMATION

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All information given by or on behalf of DSM as to properties, specifications, use, etc. of the products is based on research, including literature and is believed reliable. DSM can however, not assume any responsibility therefore nor for performance nor for results obtained through the use of the products or information involved, nor for any damages that may be caused by or to the products or information.

In this respect, the buyer is obliged to check the quality and all other properties of the products. The buyer assumes all responsibilities connected with the use of the products and information.

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#### **HISTORY**

**Printing date** : July 1, 2002  
**Date previous SDS** : April 9, 1999

This Safety Data Sheet will be updated every three years or whenever important new information becomes available.