Melamine

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)

Issue date: 30-09-2020 Version: 1.0

SECTION 1: Identification

1.1. Product identifier

Product form	:	Substance
Name	:	Melamine
Trade name	:	MelaminebyOCI™ GPH MelaminebyOCI™ GPH LD MelaminebyOCI™ SLP Melafine®
IUPAC name	:	1,3,5-Triazine-2,4,6-triamine
CAS-No.	:	108-78-1
Formula	:	$C_3H_6N_6$
Synonyms	:	Cyanuramide; Cyanurotriamide; 2,4,6-Triamino-s-triazine

1.2. Recommended use and restrictions on use

Recommended use	:	Industrial use, White crystalline powder, used in high performance products like wood-based panels, laminates, coatings, molding powders, concrete plasticizers and flame retardants
Restrictions on use	:	Addition to food or feed products

1.3. Supplier

Supplier
OCI Nitrogen B.V.
1 Mijnweg
P.O. Box 601
6160 AP Geleen - The Netherlands
T +31 (0) 46 7020111
info.melamine@ocinitrogen.com - www.ocinitrogen.com

Supplier
OCI Melamine Americas, Inc.
C/O Advanced Louisiana Logistics
501 Louisiana Avenue, Suite 201
LA 70802 Baton Rouge - USA
T +1 (225) 685 30 20 / 685 30 37 - F +1 (225) 685 30 03

Supplier
OCI Trading Shanghai
17N, Feizhou Guoji Building
No. 899 Lingling Road
200030 Shanghai - China
T +86 (0)21 64415441 - F +86 (0)21 64415440

1.4. Emergency telephone number

Emergency number	:	Chemtrec: +1-800-424-9300 (24/7) & Alert & Care Centre Chemelot (Geleen, The Netherlands): +31 (0) 46 4765555 (24/7)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Reproductive toxicity, Category 2 Suspected of damaging fertility.

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS CA labelling

Hazard pictograms (GHS CA) :

Signal word (GHS CA) : Warning

Hazard statements (GHS CA) : Suspected of damaging fertility.

Precautionary statements (GHS CA) : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear eye protection, protective clothing, protective gloves.
IF exposed or concerned: Get medical advice/attention.
Dispose of contents/container to a hazardous or special waste collection point, in accordance with local regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Melamine
CAS-No. : 108-78-1
EC-No. : 203-615-4

Name	Chemical name/Synonyms	Product identifier	Conc. (% w/w)	Classification (GHS CA)
1,3,5-Triazine-2,4,6-triamine	Cyanuramide; Cyanurotriamide; 2,4,6-Triamino-s-triazine	(CAS-No.) 108-78-1	100	Repr. 2, H361

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If breathing stops, give artificial respiration. Get medical attention immediately if symptoms occur.
First-aid measures after skin contact : Wash skin with plenty of water and soap. Remove all contaminated clothing and footwear.
First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if symptoms occur.
First-aid measures after ingestion : Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
First-aid measures general : IF exposed or concerned: Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Dust from this product may cause irritation to the respiratory tract.
Symptoms/effects after eye contact : Dust from this product may cause eye irritation.
Chronic symptoms : May damage fertility.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment : Treat symptomatically. Hazardous decomposition products in case of fire. Symptoms may be delayed. Consult an expert.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Unsuitable extinguishing media

No additional information available

5.3. Specific hazards arising from the hazardous product

Fire hazard : The product is not flammable.
Hazardous decomposition products in case of fire : Under fire conditions, hazardous fumes will be present: Carbon dioxide, Carbon monoxide, Amines, Nitrogen oxides, Ammonia, Hydrogen cyanide > 600°C.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal Precautions, Protective Equipment and Emergency Procedures : Ventilate spillage area. Evacuate unnecessary personnel. Do not breathe dust. Do not touch or walk on the spilled product. Avoid contact with skin, eyes and clothing. Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up : Mechanically recover the product. Avoid dust formation. Keep in suitable, closed containers for disposal. Notify authorities if product enters sewers or public waters.
Other information : Dispose of waste product or used containers according to local regulations. Dispose of materials or solid residues at an authorized site.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Ensure good ventilation of the work station. Avoid dust formation. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Remove contaminated clothes. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in accordance with local, regional, national or international regulation. Store in dry, well-ventilated area. Keep away from: Direct sunlight, Oxidizing agents.

Incompatible materials : Strong oxidizing agents.

Storage area : (1) Do not stack big bags > 1000 kg. Do not stack more than two bulk bags <=1000 kg on top of each other in connection with the risk of ripping. (2) 'MelaminebyOCI SLP' may not be stacked.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
Canada (British Columbia) - Occupational Exposure Limits	
Notations and remarks	IARC group 2B carcinogen
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

When this substance/product is used in a mixture consult your industrial hygienist to adjust the personal protective equipment to the (hazard) properties of the mixture.

Hand protection:

Chemically resistant protective gloves. Efficiency of at least: 80%. To increase glove efficiency additional good practice is required, e.g. provision of training or management supervision.

Type	Material	Permeation	Thickness (mm)	Penetration
Protective gloves	Chloroprene rubber (CR), Butyl rubber, Polyvinylchloride (PVC)	6 (> 480 minutes)	0.5	
Protective gloves	Nitrile rubber (NBR)	6 (> 480 minutes)	0.35	
Protective gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	0.4	

Eye protection:

Safety glasses with side shields

Type	Use	Characteristics
Safety glasses with side shields	Dust	

Skin and body protection:

Wear suitable protective clothing

Type
Long sleeved protective clothing

Respiratory protection:

In case of dust formation use respirator with filter:

Device	Filter type	Condition
Dust mask	Type P2	Dust protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline powder.
Colour	:	White
Odour	:	Odourless Ammoniacal: slight
Odour threshold	:	No data available
pH	:	7.8 – 9.5 (10% aqueous suspension)
Relative evaporation rate (butylacetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	No data available
Molecular mass	:	126.12 g/mol
Melting point	:	354 °C (with vaporization)
Freezing point	:	Not applicable
Boiling point	:	> 280 °C Decomposes
Flash point	:	> 280 °C (closed cup)
Auto-ignition temperature	:	> 500 °C
Decomposition temperature:	:	> 280 °C
Flammability (solid, gas)	:	Not flammable
Vapour pressure	:	< 0.02 kPa (20°C)
Vapour pressure at 50 °C	:	No data available
Relative vapour density at 20 °C	:	4.34 (air = 1)
Relative density	:	1.57 (20°C)
Density	:	1.57 g/cm³
Solubility	:	Slightly soluble. Water: 0.348 g/100ml (20°C)
Partition coefficient n-octanol/water (Log Pow)	:	-1.14 (25°C)
Explosive properties	:	Not explosive.
Oxidising properties	:	Non oxidizing.
Explosive limits	:	Not applicable

9.2. Other information

Other properties	:	Ignition temperature: ≥ 658 °C / 1216.4 °F.

SECTION 10: Stability and reactivity

Reactivity	:	The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No dangerous reactions known under normal conditions of use.
Conditions to avoid	:	Keep away from heat. Keep away from any flames or sparking source.
Incompatible materials	:	Oxidizing agents.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition can lead to the release of irritating gases and vapours. Thermal decomposition generates: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Amines, Ammonia, Hydrogen cyanide > 600°C.
Hardening time:	:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	:	Not classified
Acute toxicity (dermal)	:	Not classified
Acute toxicity (inhalation)	:	Not classified

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
LD50 oral rat	3161 mg/kg bodyweight
LC50 Inhalation - Rat	> 5.19 mg/l/4h (OECD 403 method)

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
ATE CA (oral)	3161 mg/kg bodyweight

Skin corrosion/irritation : Not classified
pH: 7.8 – 9.5 (10% aqueous suspension)

Serious eye damage/irritation : Not classified
pH: 7.8 – 9.5 (10% aqueous suspension)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified
In feeding studies in rats and mice, transitional-cell carcinomas in the urinary bladder were observed only for male rats and only at high doses of melamine in the diet. No carcinomas were found for female rats or for mice of either sex. There is no evidence that melamine can cause cancer to humans.
Although exposure to high levels of melamine can cause bladder stones in humans there is no evidence for cancer developing as a result of exposure to melamine.

IARC group : 2B - Possibly carcinogenic to humans2B - Possibly carcinogenic to humans

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
Additional information	LOAEL, Chronic, oral, rat: 126 mg/kg bw/day

Reproductive toxicity : Suspected of damaging fertility.

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
NOAEL (animal/male, F1)	89 mg/kg bodyweight Fertility
Additional information	Target organ(s): testis, Sperm

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
NOAEL (oral, rat, 90 days)	72 mg/kg bodyweight/day
Additional information	Target organ(s): urinary bladder, kidneys

Aspiration hazard : Not classified

Symptoms/effects after inhalation : Dust from this product may cause irritation to the respiratory tract.

Symptoms/effects after eye contact : Dust from this product may cause eye irritation.

Chronic symptoms : May damage fertility.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Melamine (108-78-1)	
Partition coefficient n-octanol/water (Log Pow)	-1.14 (25°C)

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
LC50 fish 1	> 3000 mg/l Oncorhynchus mykiss
EC50 Daphnia 1	200 mg/l Daphnia magna
EC50 96h algae (1)	325 mg/l Pseudokirchneriella subcapitata
NOEC chronic fish	≥ 5.1 mg/l Pimephales promelas (36d)
NOEC chronic crustacea	≥ 11 mg/l (21d) Daphnia magna
NOEC chronic algae	98 mg/l Species: Pseudokirchneriella subcapitata
BCF fish 1	< 3.8 l/kg
Partition coefficient n-octanol/water (Log Koc)	1.13 Quantitative structure-activity relationship (QSAR)

12.2. Persistence and degradability

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
Persistence and degradability	Not readily biodegradable. Not inherently biodegradable.

12.3. Bioaccumulative potential

Melamine (108-78-1)	
Partition coefficient n-octanol/water (Log Pow)	-1.14 (25°C)

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
Bioaccumulative potential	Bioaccumulation unlikely.
BCF fish 1	< 3.8 l/kg
Partition coefficient n-octanol/water (Log Koc)	1.13 Quantitative structure-activity relationship (QSAR)

12.4. Mobility in soil

Melamine (108-78-1)	
Partition coefficient n-octanol/water (Log Pow)	-1.14 (25°C)

1,3,5-Triazine-2,4,6-triamine (108-78-1)	
Partition coefficient n-octanol/water (Log Koc)	1.13 Quantitative structure-activity relationship (QSAR)

12.5. Other adverse effects

Ozone : Not classified

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Dispose in a safe manner in accordance with local/national regulations.

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

Product/Packaging disposal recommendations : Recycling is preferred to disposal or incineration. Do not re-use empty containers without proper cleaning or reconditioning. Avoid release to the environment.

SECTION 14: Transport information

14.1. Basic shipping description

In accordance with TDG

Transportation of Dangerous Goods

Not regulated for transport

14.2. Transport information/DOT

Department of Transport

Not regulated for transport

14.3. Air and sea transport

IMDG

Not regulated for transport

IATA

Not regulated for transport

SECTION 15: Regulatory information

15.1. National regulations

1,3,5-Triazine-2,4,6-triamine (108-78-1)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: Other information

Issue date : 30-09-2020

Indication of changes:
Not applicable.

Training advice : Training staff on good practice. Ensure staff are informed of and trained on the nature of exposure and basic actions to minimise exposure.

Abbreviations and acronyms:

PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ICAO	International Civil Aviation Organization
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
DNEL	Derived-No Effect Level
PNEC	Predicted No-Effect Concentration
EC50	Median effective concentration
NOEC	No-Observed Effect Concentration
BCF	Bioconcentration factor
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
DMEL	Derived Minimal Effect level
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
IARC	International Agency for Research on Cancer
EC-No.	European Community number
EN	European Standard
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
OECD	Organisation for Economic Co-operation and Development
STP	Sewage treatment plant
CAS-No.	Chemical Abstract Service number
NOAEL	No-Observed Adverse Effect Level

SDS Canada (GHS)

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