

SAFETY DATA SHEET

Creation Date 21-October-2009

Revision Date 24-December-2021

Revision Number 5

1. Identification

Product Name Hexamethylenetetramine

Cat No. : AC232890000; AC232890010; AC232890025

CAS-No 100-97-0
Synonyms HMTA; Hexamine; Methenamine; Hexamethylenetetramine

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Importer/Distributor
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Manufacturer
Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable solids	Category 2
Skin Sensitization	Category 1
Combustible Dusts	Category 1

Label Elements

Signal Word

Warning

Hazard Statements

Flammable solid
May form combustible dust concentrations in air
May cause an allergic skin reaction

**Precautionary Statements****Prevention**

Keep container tightly closed

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Ground/bond container and receiving equipment

Avoid breathing dust/fume/gas/mist/vapors/spray

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves/protective clothing/eye protection/face protection

Response

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

IF ON SKIN: Wash with plenty of soap and water

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage

Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	>95

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
Most important symptoms/effects	None reasonably foreseeable. May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point 250 °C / 482 °F

Method - No information available

Autoignition Temperature 400 °C / 752 °F

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. Containers may explode when heated. Dust can form an explosive mixture with air. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Ammonia. Formaldehyde.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
2

Flammability
2

Instability
1

Physical hazards
N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment as required. Avoid dust formation. Ensure adequate ventilation.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Avoid ingestion and inhalation. Avoid dust formation. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Incompatible Materials. Strong oxidizing agents. Strong acids.

8. Exposure controls / personal protection

Exposure Guidelines

Component	Alberta	British Columbia	Ontario TWAEV	Quebec	ACGIH TLV	OSHA PEL	NIOSH IDLH
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane			STEL: 0.35 ppm STEL: 2 mg/m ³		TWA: 1 mg/m ³		

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to

control hazardous materials at source

Personal protective equipment

Eye Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Hand Protection	Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Natural rubber	See manufacturers recommendations	-	Splash protection only
Nitrile rubber			
Neoprene			
PVC			

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

The absence of published exposure limits does not mean that a substance poses no inhalation hazard. If inhalation exposure is likely or if irritation or other symptoms are experienced, wear a NIOSH/MSHA or European Standard EN 149 approved respirator.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

No information available.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

9. Physical and chemical properties

Physical State	Solid
Appearance	White
Odor	Ammonia-like
Odor Threshold	No information available
pH	7 - 10 10% aq. solution
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	250 °C / 482 °F
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	0.0035 hPa @ 20 °C
Vapor Density	Not applicable
Specific Gravity	1.330
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	400 °C / 752 °F
Decomposition Temperature	260 (sublimation) °C
Viscosity	Not applicable

Molecular Formula C6 H12 N4
Molecular Weight 140.19

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions. Moisture sensitive.

Conditions to Avoid Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Excess heat. Exposure to moisture.

Incompatible Materials Strong oxidizing agents, Strong acids

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Ammonia, Formaldehyde

Hazardous Polymerization No information available.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	9200 mg/kg (Rat)	>2000 mg/kg (Rat)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	Not listed	Pimephales promelas: EC50=49.8 g/L/96h	Not listed	EC50 = 36 g/L/48h

Persistence and Degradability Soluble in water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

Component	log Pow
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	-2.2

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN1328
 Proper Shipping Name HEXAMETHYLENETETRAMINE
 Hazard Class 4.1
 Packing Group III

TDG

UN-No UN1328
 Proper Shipping Name HEXAMETHYLENETETRAMINE
 Hazard Class 4.1
 Packing Group III

IATA

UN-No UN1328
 Proper Shipping Name Hexamethylenetetramine
 Hazard Class 4.1
 Packing Group III

IMDG/IMO

UN-No UN1328
 Proper Shipping Name Hexamethylenetetramine
 Hazard Class 4.1
 Packing Group III

15. Regulatory information

International Inventories

Component	CAS-No	DSL	NDSL	TSCA	TSCA Inventory notification - Active-Inactive	EINECS	ELINCS	NLP
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	X	-	X	ACTIVE	202-905-8	-	-

Component	CAS-No	IECSC	KECL	ENCS	ISHL	TCSI	AICS	NZIoC	PICCS
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	X	KE-18615	X	X	X	X	X	X

Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Component	Canada - National Pollutant Release Inventory (NPRI)	Canadian Environmental Protection Agency (CEPA) - List of Toxic Substances	Canada's Chemicals Management Plan (CEPA)
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	Part 4 Substance		

Other International Regulations

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

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

Component	CAS-No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	Listed	Not applicable	Not applicable	Not applicable

Component	CAS-No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
1,3,5,7-Tetraazatricyclo[3.3.1.1(3,7)]decane	100-97-0	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

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Creation Date

21-October-2009

Revision Date

24-December-2021

Print Date

24-December-2021

Revision Summary

This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS