

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	: HMTA
Substance name	: Hexamethylenetetramine
EC Index-No.	: 612-101-00-2
EC-No.	: 202-905-8
CAS-No.	: 100-97-0
REACH registration No	: Not available
Formula	: C ₆ H ₁₂ N ₄
Synonyms	: Methenamine / Hexamethylene tetramine / Hexamethylenetetramine / Preparation AF / Urotropine / Duirexol / METHENAMINE / Hexamine (heterocycle) / Hexamine / 1,3,5,7-Tetraazaadamantane

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Use of the substance/mixture : Used as resin and plastic curing agent, rubber vulcanization accelerator, textile anti-shrink agent, and for the system of pesticides, explosives and so on.

1.2.2. Uses advised against

Restrictions on use : No information available

1.3. Details of the supplier of the safety data sheet

Supplier

Qingdao YLSCH Industry&Trade Co.,Ltd.
2-3 Unit No.8,Zhengzhou Road,Qingdao,China
266001
T +86-532-87691278 - F +86-532-87691278
sales@ylsch-rbb.com

Importer

1.4. Emergency telephone number

Emergency number : In China: +86-18661665800 (Office hours available)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable solids, Category 2	H228
Skin sensitisation, Category 1	H317

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Flammable solid. May cause an allergic skin reaction.

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2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Warning

Hazard statements (CLP)

: H228 - Flammable solid.

H317 - May cause an allergic skin reaction.

Precautionary statements (CLP)

: P210 - Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P240 - Ground/bond container and receiving equipment.

P241 - Use explosion-proof electrical/ventilating/lighting equipment.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P370+P378 - In case of fire: Use suitable extinguishing media for extinction.

EUH-statements

: None.

2.3. Other hazards

The components do not meet the PBT criteria of REACH regulation, annex XIII

The components do not meet the vPvB criteria of REACH regulation, annex XIII

The components are not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hexamethylenetetramine	CAS-No.: 100-97-0 EC-No.: 202-905-8 EC Index-No.: 612-101-00-2	95	Flam. Sol. 2, H228 Skin Sens. 1, H317
Silicon dioxide	CAS-No.: 7631-86-9 EC-No.: 231-545-4	5	Not classified

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: If exposed or concerned, get medical advice and attention.

First-aid measures after inhalation

: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact

: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact

: Rinse eyes with water as a precaution. If eye irritation persists: Get medical advice/attention.

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First-aid measures after ingestion : Rinse mouth. Call a poison center or a doctor if you feel unwell. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : May cause an allergic skin reaction.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Alcohol-resistant foam.

Unsuitable extinguishing media : High volume water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable solid.

Hazardous decomposition products in case of fire : Toxic fumes may be released. Hydrogen cyanide. ammonia. Formaldehyde. Nitrogen oxides. Carbon oxides (CO, CO₂).

5.3. Advice for firefighters

Firefighting instructions : Cool containers / tanks with spray water if possible. Fight fire from safe distance and protected location. Do not allow run-off from fire fighting to enter drains or water courses.

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

General measures : No additional information available.

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin, eyes and clothing. Do not breathe dust/fume/gas/mist/vapours/spray. Wear personal protective clothing (see chapter 8). Only qualified personnel equipped with suitable protective equipment may intervene. Do not touch or walk on the spilled product. Evacuate personnel to a safe area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal.

Other information : Dispose of materials or solid residues at an authorized site. Avoid dust formation.

6.4. Reference to other sections

For further information refer to section 13. See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Handle in accordance with good industrial hygiene and safety procedures. Wear personal protective equipment. Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid dust formation.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product. 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	: Keep away from food, drink and animal feedingstuffs. Store tightly closed in a dry, cool and well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Incompatible products	: Refer to Section 10 on Incompatible Materials.

7.3. Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1. National occupational exposure and biological limit values

Hexamethylenetetramine (100-97-0)	
Bulgaria - Occupational Exposure Limits	
OEL TWA	2 mg/m ³
Estonia - Occupational Exposure Limits	
OEL TWA	3 mg/m ³
OEL STEL	5 mg/m ³
Chemical category	Sensitizer
Lithuania - Occupational Exposure Limits	
IPRV (OEL TWA)	3 mg/m ³
TPRV (OEL STEL)	5 mg/m ³
Chemical category	Sensitizer
Poland - Occupational Exposure Limits	
NDS (OEL TWA)	4 mg/m ³
Sweden - Occupational Exposure Limits	
NGV (OEL TWA)	3 mg/m ³
KTV (OEL STEL)	5 mg/m ³
Chemical category	Sensitizer
Norway - Occupational Exposure Limits	
Grenseverdi (OEL TWA) [1]	3 mg/m ³
Korttidsverdi (OEL STEL)	6 mg/m ³ (value calculated)

8.1.2. Recommended monitoring procedures

No additional information available

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8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Provide local exhaust or general room ventilation. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

8.2.2. Personal protection equipment

8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

Thermal hazard protection:

No information available.

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid. Powder.
Colour	: Colourless. White.
Odour	: Odourless.
Odour threshold	: Not available
pH	: Not available
Melting point/freezing point	: Not available
Boiling point/boiling range	: Decompose before boiling(CAS#100-97-0)
Flammability	: Flammable solid.
Explosive limits	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not available
Viscosity, kinematic	: Not applicable
Solubility	: Water: 813 g/l (12 °C) (CAS#100-97-0)
Partition coefficient n-octanol/water (Log Pow)	: -2.18 (20 °C) (CAS#100-97-0)
Vapour pressure	: 0.0035 hPa (20 °C) (CAS#100-97-0)
Density/relative density	: 1.33 g/cm ³ (20 °C) (CAS#100-97-0)

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Relative vapour density	: Not applicable
Particle characteristics	: Not available
Explosive properties	: Not explosive.
Oxidising properties	: Non oxidizing.

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

9.2.2. Other safety characteristics

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Ignition sources. Open flame. Heat.

10.5. Incompatible materials

No additional information available.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

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

Hexamethylenetetramine (100-97-0)

LD50 oral rat	> 20000 mg/kg
LD50 dermal rat	> 2000 mg/kg

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Adverse health effects caused by endocrine disrupting properties

: The components are not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

11.2.2. Other information

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

Hexamethylenetetramine (100-97-0)

LC50 96h - Fish	44600 – 55600 mg/l Pimephales promelas [flow-through]
EC50 48h - Crustacea	29868 – 43390 mg/l Daphnia magna

12.2. Persistence and degradability

Hexamethylenetetramine (100-97-0)

Persistence and degradability : Readily biodegradable.

12.3. Bioaccumulative potential

Hexamethylenetetramine (100-97-0)

Partition coefficient n-octanol/water (Log Pow)	-2.18 (20 °C)
Bioaccumulative potential	No bioaccumulation expected.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Hexamethylenetetramine (100-97-0)

This substance does not meet the PBT criteria of REACH regulation, annex XIII

This substance does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

Adverse effects on the environment caused by endocrine disrupting properties

: The components are not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

12.7. Other adverse effects

No additional information available

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Do not re-use empty containers without proper cleaning or reconditioning. Refer to manufacturer/supplier for information on recovery/recycling.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1328	UN 1328	UN 1328	UN 1328	UN 1328
14.2. UN proper shipping name				
HEXAMETHYLENETETRAMINE	HEXAMETHYLENETETRAMINE	Hexamethylenetetramine	HEXAMETHYLENETETRAMINE	HEXAMETHYLENETETRAMINE
14.3. Transport hazard class(es)				
4.1	4.1	4.1	4.1	4.1
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 5kg
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P002, IBC08, R001
Special packing provisions (ADR) : B3
Mixed packing provisions (ADR) : MP10
Portable tank and bulk container instructions (ADR) : T1
Portable tank and bulk container special provisions (ADR) : TP33
Tank code (ADR) : SGAV
Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Bulk (ADR) : VC1, VC2
Hazard identification number (Kemler No.) : 40
Orange plates :



Tunnel restriction code (ADR) : E
EAC code : 1Z

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Transport by sea

Limited quantities (IMDG)	: 5 kg
Excepted quantities (IMDG)	: E1
Packing instructions (IMDG)	: P002
IBC packing instructions (IMDG)	: IBC08
IBC special provisions (IMDG)	: B3
Tank instructions (IMDG)	: T1
Tank special provisions (IMDG)	: TP33
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-G
Stowage category (IMDG)	: A
Properties and observations (IMDG)	: White, crystalline powder. Soluble in water.

Air transport

PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y443
PCA limited quantity max net quantity (IATA)	: 10kg
PCA packing instructions (IATA)	: 446
PCA max net quantity (IATA)	: 25kg
CAO packing instructions (IATA)	: 449
CAO max net quantity (IATA)	: 100kg
Special provisions (IATA)	: A803
ERG code (IATA)	: 3L

Inland waterway transport

Classification code (ADN)	: F1
Limited quantities (ADN)	: 5 kg
Excepted quantities (ADN)	: E1
Equipment required (ADN)	: PP
Number of blue cones/lights (ADN)	: 0

Rail transport

Classification code (RID)	: F1
Limited quantities (RID)	: 5kg
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P002, IBC08, R001
Special packing provisions (RID)	: B3
Mixed packing provisions (RID)	: MP10
Portable tank and bulk container instructions (RID)	: T1
Portable tank and bulk container special provisions (RID)	: TP33
Tank codes for RID tanks (RID)	: SGAV
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W1
Special provisions for carriage – Bulk (RID)	: VC1, VC2
Colis express (express parcels) (RID)	: CE11
Hazard identification number (RID)	: 40

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

CAS#100-97-0:

No REACH Annex XVII restrictions

Not on the REACH Candidate List

Not on the REACH Annex XIV List

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Not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

CAS#100-97-0:

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Substances List)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Japanese ISHL (Industrial Safety and Health Law)

Listed on KECL/KECI (Korean Existing Chemicals Inventory)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on the Canadian IDL (Ingredient Disclosure List)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on the TCSI (Taiwan Chemical Substance Inventory)

Germany

Water hazard class (WGK)

: CAS#100-97-0: WGK 1, Slightly hazardous to water (Classification according to AwSV)

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration

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Abbreviations and acronyms	
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Data sources : Loli. ECHA

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Full text of H- and EUH-statements	
Flam. Sol. 2	Flammable solids, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
H228	Flammable solid.
H317	May cause an allergic skin reaction.

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.