

# SAFETY DATA SHEET

(in accordance with Regulation (EU) 2015/830)



## HEXAMINE

Version: 3  
Revision date: 19/09/2017

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### SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY/UNDERTAKING.

#### 1.1 Product identifier.

Product Name: HEXAMINE  
Chemical Name: Metenamine  
Index No: 612-101-00-2  
CAS No: 100-97-0  
EC No: 202-905-8  
Registration No: 01-2119474895-20-XXXX

#### 1.2 Relevant identified uses of the substance and uses advised against.

Not available.

#### 1.3 Details of the supplier of the safety data sheet.

Company: **ALDEBARÁN SISTEMAS SL**  
Address: C/Jerónimo Zurita, 10, entlo izda, 50001  
City: Zaragoza  
Province: Zaragoza  
Telephone: 0034976796134  
E-mail: aldebaran@aldebaransistemas.com

#### 1.4 Emergency telephone number: 0034915620420 (Available 24 hours)

### SECTION 2: HAZARDS IDENTIFICATION.

#### 2.1 Classification of the substance.

In accordance with Regulation (EU) No 1272/2008:  
Flam. Sol. 2 : Flammable solid.  
Skin Sens. 1 : May cause an allergic skin reaction.

#### 2.2 Label elements.

##### Labelling in accordance with Regulation (EU) No 1272/2008:

##### Pictograms:



Signal Word:

**Warning**

H statements:

H228 Flammable solid.  
H317 May cause an allergic skin reaction.

P statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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P302+P352 IF ON SKIN: Wash with plenty of water/...

Contains:  
hexamethylenetetramine, methenamine

### 2.3 Other hazards.

In normal use conditions and in its original form, the product itself does not involve any other risk for health and the environment.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS.

### 3.1 Substances.

Chemical Name:	Metenamine
Index No:	612-101-00-2
CAS No:	100-97-0
EC No:	202-905-8
Registration No:	01-2119474895-20-XXXX

### 3.2 Mixtures.

Not Applicable.

## SECTION 4: FIRST AID MEASURES.

### 4.1 Description of first aid measures.

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

#### Inhalation.

Take the victim into open air; keep them warm and calm. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.

#### Eye contact.

If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

#### Skin contact.

Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. **NEVER** use solvents or thinners.

#### Ingestion.

If accidentally ingested, seek immediate medical attention. Keep calm. **NEVER** induce vomiting.

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

Irritant Product, repeated or prolonged contact with skin or mucous membranes can cause redness, blisters or dermatitis, inhalation of spray mist or particles in suspension may cause irritation of the respiratory tract, some symptoms may not be immediate. Can cause allergic reactions.

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

In case of doubt or when symptoms of feeling unwell persist, get medical attention. Never administer anything orally to persons who are unconscious.

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### SECTION 5: FIREFIGHTING MEASURES.

Flammable product, the necessary prevention measures should be taken in order to avoid risks, In case of fire, the following measures are recommended:

#### 5.1 Extinguishing media.

##### Recommended extinguishing methods.

Extinguisher powder or CO<sub>2</sub>. In case of more serious fires, also alcohol-resistant foam and water spray. Do not use a direct stream of water to extinguish.

#### 5.2 Special hazards arising from the substance.

##### Special risks.

Dust may form explosive mixture with air. In case of fire, dangerous decomposition products may form, such as: nitrogen oxides, hydrocyanic acid, ammonia, formaldehyde,

#### 5.3 Advice for firefighters.

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Take wind direction into account. Prevent the products used to fight the fire from going into drains, sewers, or waterways.

##### Fire protection equipment.

According to the size of the fire, it may be necessary to use protective suits against the heat, individual breathing equipment, gloves, protective goggles or facemasks, and gloves.

### SECTION 6: ACCIDENTAL RELEASE MEASURES.

#### 6.1 Personal precautions, protective equipment and emergency procedures.

Eliminate possible ignition points and ventilate the area. No smoking. For exposure control and individual protection measures, see section 8.

#### 6.2 Environmental precautions.

Prevent the contamination of drains, surface or subterranean waters, and the ground.

#### 6.3 Methods and material for containment and cleaning up.

The contaminated area should be immediately cleaned with an appropriate de-contaminator. Pour the decontaminator on the remains in an opened container and let it act various days until no further reaction is produced.

#### 6.4 Reference to other sections.

For exposure control and individual protection measures, see section 8.

For later elimination of waste, follow the recommendations under section 13.

### SECTION 7: HANDLING AND STORAGE.

#### 7.1 Precautions for safe handling.

For personal protection, see section 8. Never use pressure to empty the containers. They are not pressure-resistant containers.

In the application area, smoking, eating, and drinking must be prohibited.

Follow legislation on occupational health and safety.

Keep the product in containers made of a material identical to the original.

#### 7.2 Conditions for safe storage, including any incompatibilities.

Store according to local legislation. Observe indications on the label. Store the containers between 5 and 35° C, in a dry and well-ventilated place, far from sources of heat and direct solar light. Keep far away from ignition points. Keep away from oxidising agents and from highly acidic or alkaline materials. Do not smoke. Prevent the entry of non-authorized persons. Once the containers are open, they must be carefully closed and placed vertically to prevent spills.

The product is not affected by Directive 2012/18/EU (SEVESO III).

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**7.3 Specific end use(s).**  
Not available.

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION.

#### 8.1 Control parameters.

The product does NOT contain substances with Professional Exposure Environmental Limit Values. The product does NOT contain substances with Biological Limit Values.

Concentration levels DNEL/DMEL:

Name	DNEL/DMEL	Type	Value
hexamethylenetetramine, methenamine CAS No: 100-97-0 EC No: 202-905-8	DNEL (Workers)	Inhalation, Long-term, Systemic effects	31 (mg/m <sup>3</sup> )
	DNEL (General population)	Inhalation, Long-term, Systemic effects	6,7 (mg/m <sup>3</sup> )
	DNEL (Workers)	Inhalation, Acute, Systemic effects	1400 (mg/m <sup>3</sup> )
	DNEL (General population)	Inhalation, Acute, Systemic effects	140 (mg/m <sup>3</sup> )
	DNEL (Workers)	Dermal, Long-term, Systemic effects	8,8 (mg/kg bw/day)
	DNEL (General population)	Dermal, Long-term, Systemic effects	1,9 (mg/kg bw/day)
	DNEL (Workers)	Dermal, Acute, Systemic effects	229 (mg/kg bw/day)
	DNEL (General population)	Dermal, Acute, Systemic effects	22,9 (mg/kg bw/day)
	DNEL (General population)	Oral, Long-term, Systemic effects	0,95 (mg/kg bw/day)
	DNEL (General population)	Oral, Acute, Systemic effects	20 (mg/kg bw/day)

DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.

DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.

Concentration levels PNEC:

Name	Details	Value
hexamethylenetetramine, methenamine CAS No: 100-97-0 EC No: 202-905-8	aqua (freshwater)	3 (mg/L)
	aqua (marine water)	0,5 (mg/L)
	aqua (intermittent releases)	30 (mg/L)
	PNEC STP	100 (mg/L)
	sediment (freshwater)	11 (mg/kg sediment dw)
	sediment (marine water)	1,84 (mg/kg sediment dw)
	soil	0,58 (mg/kg soil dw)
	oral (Hazard for predators)	0,05 (g/kg food)

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PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.

### 8.2 Exposure controls.

#### Measures of a technical nature:

Provide adequate ventilation, which can be achieved by using good local exhaust-ventilation and a good general exhaust system.

<b>Concentration:</b>	<b>100 %</b>		
<b>Uses:</b>			
<b>Breathing protection:</b>			
PPE:	Particle filter mask		
Characteristics:	«CE» marking, category III. Made of filtering material, it covers nose, mouth and chin.		
CEN standards:	EN 149		
Maintenance:	Check for any tears, defects, etc. before use. Since it is disposable individual protection equipment, it should be replaced after use.		
Observations:	Does not protect worker unless properly adjusted. Follow the manufacturer's instructions regarding suitable use of the equipment.		
Filter Type needed:	P2		
<b>Hand protection:</b>			
PPE:	Work gloves.		
Characteristics:	«CE» marking, category I.		
CEN standards:	EN 374-1, En 374-2, EN 374-3, EN 420		
Maintenance:	Keep in a dry place, away from any sources of heat, and avoid exposure to sunlight as much as possible. Do not make any changes to the gloves that may alter their resistance, or apply paints, solvents or adhesives.		
Observations:	Gloves should be of the appropriate size and fit the user's hand well, not being too loose or too tight. Always use with clean, dry hands.		
Material:	PVC (polyvinyl chloride)	Breakthrough time (min.):	> 480
		Material thickness (mm):	0,35
<b>Eye protection:</b>			
PPE:	Protective goggles against particle impacts.		
Characteristics:	«CE» marking, category II. Eye protector against dust and smoke.		
CEN standards:	EN 165, EN 166, EN 167, EN 168		
Maintenance:	Visibility through lenses should be ideal. Therefore, these parts should be cleaned daily. Protectors should be disinfected periodically following the manufacturer's instructions.		
Observations:	Some signs of wear and tear include: yellow colouring of the lenses, superficial scratching of the lenses, scraping etc.		
<b>Skin protection:</b>			
PPE:	Anti-static protective clothing.		
Characteristics:	«CE» marking, category II. Protective clothing should not be too tight or loose in order not to obstruct the user's movements.		
CEN standards:	EN 340, EN 1149-1, EN 1149-2, EN 1149-3, EN 1149-5		
Maintenance:	In order to guarantee uniform protection, follow the washing and maintenance instructions provided by the manufacturer.		
Observations:	The protective clothing should offer a level of comfort in line with the level of protection provided in terms of the hazard against which it protects, bearing in mind environmental conditions, the user's level of activity and the expected time of use.		
PPE:	Anti-static safety footwear.		
Characteristics:	«CE» marking, category II.		
CEN standards:	EN ISO 13287, EN ISO 20344, EN ISO 20346		
Maintenance:	The footwear should be checked regularly		

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Observations:	The level of comfort during use and acceptability are factors that are assessed very differently depending on the user. Therefore, it is advisable to try on different footwear models and, if possible, different widths.
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### SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES.

#### 9.1 Information on basic physical and chemical properties.

Appearance: White Powder  
Colour: White  
Odour: Weak  
Odour threshold: N.A./N.A.  
pH: 7-9 (10%)  
Melting point: >280 °C  
Boiling Point: N.A./N.A.  
Flash point: 250 °C  
Evaporation rate: N.A./N.A.  
Inflammability (solid, gas): N.A./N.A.  
Lower Explosive Limit: N.A./N.A.  
Upper Explosive Limit: N.A./N.A.  
Vapour pressure: N.A./N.A.  
Vapour density: N.A./N.A.  
Relative density: 1,33 g/cm<sup>3</sup>  
Solubility: 895 g/l 20°C  
Liposolubility: N.A./N.A.  
Hydrosolubility: N.A./N.A.  
Partition coefficient (n-octanol/water): N.A./N.A.  
Auto-ignition temperature: 390 °C  
Decomposition temperature: > 263°C  
Viscosity: N.A./N.A.  
Explosive properties: N.A./N.A.  
Oxidizing properties: N.A./N.A.  
N.A./N.A.= Not Available/Not Applicable due to the nature of the product

#### 9.2 Other information.

Pour point: N.A./N.A.  
Blink: N.A./N.A.  
Kinematic viscosity: N.A./N.A.  
N.A./N.A.= Not Available/Not Applicable due to the nature of the product

### SECTION 10: STABILITY AND REACTIVITY.

#### 10.1 Reactivity.

The product does not present hazards by their reactivity.

#### 10.2 Chemical stability.

Unstable in contact with:

- Acids.
- Bases.
- Oxidizing agents.

#### 10.3 Possibility of hazardous reactions.

In certain conditions this may cause a polymerization reaction.

#### 10.4 Conditions to avoid.

Avoid the following conditions:

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- Heating.
- High temperature.
- Contact with incompatible materials.

### 10.5 Incompatible materials.

Avoid the following materials:

- Acids.
- Bases.
- Oxidizing agents.

### 10.6 Hazardous decomposition products.

Depending on conditions of use, can be generated the following products:

- COx (carbon oxides).
- NOx (nitrogen oxides).
- Organic compounds.
- Nitrogenous compounds.

## SECTION 11: TOXICOLOGICAL INFORMATION.

### 11.1 Information on toxicological effects.

Repeated or prolonged contact with the product can cause the elimination of oil from the skin, giving rise to non-allergic contact dermatitis and absorption of the product through the skin.

Splatters in the eyes can cause irritation and reversible damage.

### Toxicological information.

Name	Acute toxicity			
	Type	Test	Kind	Value
hexamethylenetetramine, methenamine	Oral	LD50	Rat	9200 mg/kg [1]
		LD50	Mouse	1853 mg/kg [2]
	Dermal	[1] Hexamethylene a review, Dreyfors, J.M., Jones, S. B., Sayed, Y., 1989.		
		[2] In vivo mammalian bone marrow cytogenetic test (Chromosomal analysis) - Results of testing Urotovet(R), Vujosevic, M., Zivkovic, S., Fister, S. 1986.		
Inhalation	LD50	Rat	>2000 mg/kg bw [1]	
	[1] Study report, 1997. OECD Guideline 402 (Acute Dermal Toxicity) 1987.			
CAS No: 100-97-0	EC No: 202-905-8			

a) acute toxicity;  
Not conclusive data for classification.

b) skin corrosion/irritation;  
Not conclusive data for classification.

c) serious eye damage/irritation;  
Not conclusive data for classification.

d) respiratory or skin sensitisation;  
Product classified:  
Skin sensitizer, Category 1: May cause an allergic skin reaction.

e) germ cell mutagenicity;

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Not conclusive data for classification.

f) carcinogenicity;  
Not conclusive data for classification.

g) reproductive toxicity;  
Not conclusive data for classification.

h) STOT-single exposure;  
Not conclusive data for classification.

i) STOT-repeated exposure;  
Not conclusive data for classification.

j) aspiration hazard;  
Not conclusive data for classification.

### SECTION 12: ECOLOGICAL INFORMATION.

#### 12.1 Toxicity.

Name	Ecotoxicity			
	Type	Test	Kind	Value
hexamethylenetetramine, methenamine  CAS No: 100-97-0      EC No: 202-905-8	Fish	LC50	Cyprinodon variegatus	49000 mg/l (96 h)
		LC50	Lepomis macrochirus	41000 mg/l (96 h) [1]
	Aquatic invertebrates	LC50	Daphnia magna	36000 mg/l (48 h)
		LC50	Nitocra spinipes (Crustacea)	92500 mg/l (96 h)
	Aquatic plants			

#### 12.2 Persistence and degradability.

No information is available about persistence and degradability of the product.

#### 12.3 Bioaccumulative potential.

##### Information about the bioaccumulation.

Name	Bioaccumulation			
	Log Pow	BCF	NOECs	Level
hexamethylenetetramine, methenamine  N. CAS: 100-97-0      EC No: 202-905-8	-2,2	-	-	Very low

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### 12.4 Mobility in soil.

No information is available about the mobility in soil.  
The product must not be allowed to go into sewers or waterways.  
Prevent penetration into the ground.

### 12.5 Results of PBT and vPvB assessment.

No information is available about the results of PBT and vPvB assessment of the product.

### 12.6 Other adverse effects.

No information is available about other adverse effects for the environment.

## SECTION 13 DISPOSAL CONSIDERATIONS.

### 13.1 Waste treatment methods.

Do not dump into sewers or waterways. Waste and empty containers must be handled and eliminated according to current, local/national legislation.  
Follow the provisions of Directive 2008/98/EC regarding waste management.

## SECTION 14: TRANSPORT INFORMATION.

Transport following ADR rules for road transport, RID rules for railway, ADN for inner waterways, IMDG for sea, and ICAO/IATA for air transport.

**Land:** Transport by road: ADR, Transport by rail: RID.

Transport documentation: Consignment note and written instructions

**Sea:** Transport by ship: IMDG.

Transport documentation: Bill of lading

**Air:** Transport by plane: ICAO/IATA.

Transport document: Airway bill.

### 14.1 UN number.

UN No: UN1328

### 14.2 UN proper shipping name.

Description:

ADR: UN 1328, HEXAMETHYLENETE-TRAMINE, 4.1, PG III, (E)

IMDG: UN 1328, HEXAMETHYLENETE-TRAMINE, 4.1, PG III

ICAO: UN 1328, HEXAMETHYLENETE-TRAMINE, 4.1, PG III

### 14.3 Transport hazard class(es).

Class(es): 4.1

### 14.4 Packing group.

Packing group: III

### 14.5 Environmental hazards.

Marine pollutant: No

### 14.6 Special precautions for user.

Labels: 4.1

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Hazard number: 40  
ADR LQ: 5 kg  
IMDG LQ: 0  
ICAO LQ: 10 kg

Provisions concerning carriage in bulk ADR:

VC1 Carriage in bulk in sheeted vehicles, sheeted containers or sheeted bulk containers is permitted.

VC2 Carriage in bulk in closed vehicles, closed containers or closed bulk containers is permitted.

Transport by ship, FEm – Emergency sheets (F – Fire, S - Spills): F-A,S-G

Proceed in accordance with point 6.

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code.

The product is not transported in bulk.

## SECTION 15: REGULATORY INFORMATION.

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

The product is not affected by the Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer.

The product is not affected by Directive 2012/18/EU (SEVESO III).

The product is not affected by Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products.

The product is not affected by the procedure established Regulation (EU) No 649/2012, concerning the export and import of dangerous chemicals.

### 15.2 Chemical safety assessment.

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## SECTION 16: OTHER INFORMATION.

Classification codes:

Flam. Sol. 2 : Flammable solid, Category 2

Skin Sens. 1 : Skin sensitiser, Category 1

Sections changed compared with the previous version:

1,2,16

It is advisable to carry out basic training with regard to health and safety at work in order to handle this product correctly.

Abbreviations and acronyms used:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

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BCF: Bioconcentration factor.  
CEN: European Committee for Standardization.  
DMEL: Derived Minimal Effect Level, exposure level corresponding to a low risk, that risk should be considered a tolerable minimum.  
DNEL: Derived No Effect Level, level of exposure to the substance below which adverse effects are not anticipated.  
EC50: Half maximal effective concentration.  
PPE: Personal protection equipment.  
IATA: International Air Transport Association.  
ICAO: International Civil Aviation Organization.  
IMDG: International Maritime Code for Dangerous Goods.  
LC50: Lethal concentration, 50%.  
LD50: Lethal dose, 50%.  
Log Pow: Logarithm of the partition octanol-water.  
NOEC: No observed effect concentration.  
PNEC: Predicted No Effect Concentration, concentration of the substance below which adverse effects are not expected in the environmental compartment.  
RID: Regulations Concerning the International Transport of Dangerous Goods by Rail.

Key literature references and sources for data:

<http://eur-lex.europa.eu/homepage.html>

<http://echa.europa.eu/>

Regulation (EU) 2015/830.

Regulation (EC) No 1907/2006.

Regulation (EU) No 1272/2008.

The information given in this Safety Data Sheet has been drafted in accordance with COMMISSION REGULATION (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

The information in this Safety Data Sheet on the Preparation is based on current knowledge and on current EC and national laws, as far as the working conditions of the users is beyond our knowledge and control. The product must not be used for purposes other than those that are specified without first having written instructions on how to handle. It is always the responsibility of the user to take the appropriate measures in order to comply with the requirements established by current legislation. The information contained in this Safety Sheet only states a description of the safety requirements for the preparation, and it must not be considered as a guarantee of its properties.