

## SAFETY DATA SHEET

### HEXAMINE 99.5 – 100.5 %

#### SECTION I: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name:</b>	Hexamethylenetetramine	<b>Company Name:</b>	Gameron Petro Industry Complex
<b>Brand:</b>	Gameron	<b>P. O. Box:</b>	1516663137
<b>Index-No.:</b>	612-101-00-2	<b>Website:</b>	www.gameron.ir
<b>CAS-No:</b>	100-97-0	<b>Telephone:</b>	+98-021-88878254
		<b>Fax:</b>	+98-021-88878152
			+98-021-88785579
		<b>Emergency Phone:</b>	+98-076-32560480

#### SECTION II: HAZARDS IDENTIFICATION

##### Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 2), H228  
Skin sensitization (Sub-category 1B), H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

##### GHS Label elements, including precautionary statements

Pictogram



Signal Word            Warning

Hazard statement(s)

H228    Flammable solid.

H317    May cause an allergic skin reaction.

Precautionary statement(s)

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.

P261    Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P272    Contaminated work clothing must not be allowed out of the workplace.

P280    Wear protective gloves/ eye protection/ face protection. P302 + P352    IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P363 Wash contaminated clothing before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P501 Dispose of contents/ container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS - none**

### SECTION 3: Composition/information on ingredients

#### Substances

<b>Synonyms:</b>	Urotropine 1,3,5,7-Tetraazatricyclo [3.3.1.1 <sup>3,7</sup> ] decane Hexamine Methenamine
<b>Formula:</b>	C <sub>6</sub> H <sub>12</sub> N <sub>4</sub>
<b>Molecular weight:</b>	140.19 g/mol
<b>CAS-No.:</b>	100-97-0
<b>EC-No.:</b>	202-905-8
<b>Index-No.:</b>	612-101-00-2

Component	Classification	Concentration
<b>Hexamethylenetetramine</b>		
	Flam. Sol. 2; Skin Sens. 1B; H228, H317	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

#### Description of first-aid measures

##### General advice

Show this material safety data sheet to the doctor in attendance.

##### If inhaled

After inhalation: fresh air

##### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

**In case of eye contact**

After eye contact: rinse out with plenty of water. Remove contact lenses.

**If swallowed**

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

**Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**Indication of any immediate medical attention and special treatment needed**

No data available

**SECTION 5: Firefighting measures****Extinguishing media****Suitable extinguishing media**

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Carbon oxides Nitrogen oxides (NO<sub>x</sub>)

Hydrogen cyanide (hydrocyanic acid) Combustible.

Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

**Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

**Environmental precautions**

Do not let product enter drains. Risk of explosion.

**Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry.

Dispose of properly. Clean up affected area. Avoid generation of dusts.

#### **Reference to other sections**

For disposal see section 13.

### **SECTION 7: Handling and storage**

#### **Precautions for safe handling**

#### **Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### **Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

#### **Conditions for safe storage, including any incompatibilities**

#### **Storage conditions**

Tightly closed. Keep away from heat and sources of ignition.

hygroscopic

#### **Storage class**

Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

#### **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

### **SECTION 8: Exposure controls/personal protection**

#### **Control parameters**

#### **Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

#### **Exposure controls**

#### **Appropriate engineering controls**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### **Personal protective equipment**

#### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

#### **Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Full contact

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use.

When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: KCL 741 Dermatril® L

### Body Protection

Flame retardant antistatic protective clothing.

### Respiratory protection

Required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

## SECTION 9: Physical and chemical properties

### Information on basic physical and chemical properties

A)	Appearance	Form: crystalline Color: colorless
B)	Odor	ammoniacal
C)	Odor Threshold	No data available
D)	pH	No data available
E)	Melting point/freezing point	Melting point/range: 280 °C (536 °F) No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	250 °C (482 °F) - closed cup
h)	Evaporation rate	No data available
I)	Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 2.
J)	Upper/lower flammability or explosive limits	No data available
K)	Vapor pressure	< 0.01 hPa at 20 °C (68 °F)
L)	Vapor density	No data available
M)	Density	1.331 g/cm <sup>3</sup> at 22 °C (72 °F) - (HSDB)
	Relative density	No data available
N)	Water solubility	soluble, (HSDB)
O)	Partition coefficient:n-octanol/water	log Pow: -2.18 at 20 °C (68 °F) - Bioaccumulation is not expected (ECHA)
P)	Autoignition temperature	No data available
Q)	Decomposition temperature	No data available
R)	Viscosity	No data available
S)	Explosive properties	No data available
T)	Oxidizing properties	None

#### Other safety information

Surface tension 70.4 mN/m at 20 °C (68 °F) - Regulation (EC)  
No.440/2008, Annex, A.5

### SECTION 10: Stability and reactivity

#### Reactivity

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

#### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature)

#### Possibility of hazardous reactions

Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines! Risk of explosion with:

Halogenated hydrocarbon Nitric acid

Acetic anhydride iodine

iodoform (triiodomethane) Exothermic reaction with:

Oxidizing agents

peroxi compounds

A risk of explosion and/or of toxic gas formation exists with the following substances: Acids

#### Conditions to avoid

Exposure to moisture.

Strong heating.

#### Incompatible materials

Strong oxidizing agents

#### Hazardous decomposition products

In the event of fire: see section 5

### SECTION 11: Toxicological information

#### Information on toxicological effects Mixture

##### Acute toxicity

LD50 Oral - Rat - > 20,000 mg/kg Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal Dermal - Rat - male and female - > 2,000 mg/kg (OECD Test Guideline 402)

No data available

##### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

#### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

#### **Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: May cause sensitization by skin contact.

(OECD Test Guideline 406).

#### **Germ cell mutagenicity**

Test Type: Ames test

Test system: *S. typhimurium*

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 473

Result: negative

Test Type: Chromosome aberration test Species: Mouse

Cell type: Bone marrow Application Route: Oral

Result: negative Remarks: (ECHA)

#### **Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.)

#### **Reproductive toxicity**

No data available

#### **Specific target organ toxicity - single exposure**

No data available

#### **Specific target organ toxicity - repeated exposure**

No data available

#### **Aspiration hazard**

No data available

#### **Additional Information**

Repeated dose toxicity - Rat - female - Oral - 104 Weeks - NOAEL (No observed adverse effect level) - 2,000 - 2,500 mg/kg

RTECS: MN4725000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence



**DOT (US)**

UN number: 1328                      Class: 4.1                      Packing group: III Proper  
shipping name: Hexamethylenetetramine  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

**IMDG**

UN number: 1328                      Class: 4.1                      Packing group: III                      EMS-No: F-A, S-G Proper  
shipping name: HEXAMETHYLENETETRAMINE

**IATA**

UN number: 1328                      Class: 4.1                      Packing group: III Proper  
shipping name: Hexamethylenetetramine

**SECTION 15: Regulatory information****SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Fire Hazard, Chronic Health Hazard

**Massachusetts Right to Know Components**

No components are subject to the Massachusetts Right to Know Act.

**SECTION 16: Other information****Further information**

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