Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 14.04.2020 Version number 1 Revision: 14.04.2020

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

· **Product identifier**

· **Trade name: Hexamethylenetetramine Type C, Type CT, Type MK**
· **Registration number** 01-2119474895-20-0001
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU9 Manufacture of fine chemicals
SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
· **Product category**
PC19 Intermediate
PC21 Laboratory chemicals
· **Process category**
PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC4 Chemical production where opportunity for exposure arises
PROC5 Mixing or blending in batch processes
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC10 Roller application or brushing
PROC15 Use as laboratory reagent
· **Environmental release category**
ERC1 Manufacture of the substance
ERC2 Formulation into mixture
ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
ERC6a Use of intermediate
ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article)
· **Application of the substance / the mixture**
Polymer Production and polymeric compounds
Cosmetic auxiliary
Fuels
Washing and Cleaning products including solvent based products
Rubber Production
Process Aid

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
PJSC Metafrax
618250 Gubakha, Perm Region
Russia
+7 34 248 403 38
+7 34 248 471 21
metafrax@permonline.ru
www.metafrax.ru

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· **Further information obtainable from:** Metadynea Regulatory Department sds@metadynea.com
· **Emergency telephone number:** Safety Department: During opening hours +79150713349

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2 Hazards identification

· **Classification of the substance or mixture**


flame

Flam. Sol. 2 H228 Flammable solid.

Skin Sens. 1 H317 May cause an allergic skin reaction.

· **Label elements**
· **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**


GHS02 GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
methenamine
· **Hazard statements**
Flammable solid.
May cause an allergic skin reaction.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment (see on this label).
Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical characterisation: Mixtures**
· **Description:** Mixture of substances listed below with nonhazardous additions.

· **Dangerous components:**		
100-97-0	methenamine Flam. Liq. 2, H225; Flam. Sol. 2, H228; Skin Sens. 1, H317	97-100%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

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4 First aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Do not leave affected persons unattended.
Personal protection for the First Aider.
No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer an appropriate mask or self-contained breathing apparatus must wear. For the first person providing aid it can be dangerous to perform mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before you take them off or wear gloves.
Move the victim to a safe area as soon as possible. If unconscious, place in a stable side position and seek medical advice. In the case of non-existent or irregular breathing or the occurrence of respiratory arrest, trained medical personnel shall initiate artificial respiration or oxygenation. Keep the airway open. Loosen tight-fitting garments (eg collar, tie, belt or waistband). Rest the affected person in a well-ventilated room.
· **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
· **After skin contact:**
Wash skin immediately with plenty of water. Put off contaminated clothing and shoes. If irritation occurs, consult a doctor. Wash clothing before reuse.
· **After eye contact:**
Open eye and rinse with clear, running water. Remove contact lenses. Then consult a doctor.
Rinse immediately with plenty of water and occasionally lift the upper and lower lip. Check for and remove contact lenses. Rinse continuously for at least 10 minutes. Consult a doctor if irritation occurs
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
Call a doctor immediately. Rinse mouth with water.
Remove affected person to fresh air. Keep person warm and calm. If the substance has been swallowed and the affected person is conscious, give them small amounts of water to drink. In case of nausea, do not continue drinking because vomiting can be dangerous. Do not induce vomiting unless expressly advised by medical personnel. If vomiting occurs, keep the head low so that the vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in a stable lateral position and seek medical help immediately. Keep the airway open. Loosen tight garments.

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· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
Gastric or intestinal disorders
Allergic reactions
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire extinguishing methods suitable to surrounding conditions.
· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide (CO)
· **Advice for firefighters**
Wear a self-contained breathing apparatus and chemical resistant suit
Firefighters should wear appropriate protective clothing and self-contained full-face respirators operating in positive-pressure mode. Clothing for firefighters (including helmets, protective boots and protective gloves), which complies with European Standard EN 469, provides basic protection against accidents involving chemicals.
· **Protective equipment:** No special measures required.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
In case of seepage into the ground inform responsible authorities.
Do not allow to enter sewers/ surface or ground water.
· **Methods and material 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. Disposing of waste. Clean up. Avoid the formation of dust.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Use only in well ventilated areas.
· **Information about fire - and explosion protection:**
Do not spray onto a naked flame or any incandescent material.
Use explosion-proof apparatus / fittings and spark-proof tools.
Use only in explosion protected area.

· **Conditions for safe storage, including any incompatibilities** keep dry

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· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Store receptacle in a well ventilated area.
· **Specific end use(s)** No further relevant information available.

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8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
100-97-0 methenamine	
PDK (Russia)	Long-term value: 0.3 mg/m³ a; +;

· **DNELs**
hexamethylenetetramine
Worker DNEL long-term systemic effects Skin 8.8 mg / kg body weight
Worker DNEL long-term systemic effects inhalation 31 mg / m3 product.
· **PNECs**
Hexamethylenetetramine

PNEC aqua – freshwater (mg/l) 3 Three short term studies - three freshwater species
PNEC aqua - marine water (mg/l) 0.5 Three short term studies - three salt water species
PNEC aqua – intermittent releases (mg/l) 30 Three short term studies - three species.
PNEC sediment (mg/kg wwt) 2.4 Extrapolation method
PNEC sediment-marine
(mg/kg wwt) 0.4 Extrapolation method
PNEC soil (mg/kg wwt) 0.58 Extrapolation method
PNEC stp (mg/l.) 100 One test on inhibition of nitrification
· **Additional information:** The lists valid during the making were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
· **Respiratory protection:**
Hexamethylenetetramine

required when dusts are generated.
Recommended Filter type: Filter P 2
The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures must be properly documented.
Filter A/P2
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **As protection from splashes gloves made of the following materials are suitable:**
Nitrile rubber, NBR

· **Eye protection:**

Tightly sealed goggles

· **Body protection:** Protective work clothing

· **Risk management measures**
Food, beverages and tobacco products may not be worn, stored or consumed in premises in which this material is used. Wash thoroughly with soap and water before eating, drinking and smoking face and hands.

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Powder
Colour:	White
· **Odour:**	Ammonia-like
· **Odour threshold:**	Not determined.
· **pH-value at 20 °C:**	7-9
· **Change in condition**	
Melting point/freezing point:	280 °C Decomposition 260-295 °C
Initial boiling point and boiling range:	260 °C
· **Flash point:**	130 °C
· **Flammability (solid, gas):**	34.5 s/100 mm
· **Ignition temperature:**	410 °C
· **Decomposition temperature:**	260-295°C
· **Auto-ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Not determined.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapour pressure:**	0.1 mmHg

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· **Density at 20 °C:**	1.33 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with water:**	Fully miscible. Soluble.
· **Partition coefficient: n-octanol/water:**	- 2,18
· **Viscosity:**	
Dynamic at 20 °C:	2.5 mPas
Kinematic:	Not applicable.
· **Solvent content:**	
Water:	0.5 %
Solids content:	99.5 %
· **Other information**	No further relevant information available.

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10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability** The product is chemically stable und normal conditions
· **Thermal decomposition / conditions to be avoided:**
ATTENTION: Do not heat the product above 95°C. Danger of Decomposition into Ammonia!
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity**
· **LD/LC50 values relevant for classification:**
hexamethylenetetramine

Acute oral toxicity
LD50 Rat: 9200 mg / kg (IUCLID)

Acute inhalation toxicity
Symptoms: Possible damages :, mucosal irritations, Cough, Shortness of breath

Acute dermal toxicity
Dermal LD50 Rat:> 2000 mg / kg
OECD Test Guideline 402
skin Irritation
Rabbit
Result: No irritation.
OECD Test Guideline 404

Eye irritation
Rabbit

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Result: No eye irritation
OECD Test Guideline 405

consciousness
Maximization Test (GPMT) guinea pig
Result: positive
Method: OECD Test Guideline 406
Patch test: human
Result: positive
(IUCLID)
May cause allergic skin reactions.

· **Primary irritant effect:**
· **Skin corrosion/irritation** No irritant effect.
· **Serious eye damage/irritation** No irritating effect.
· **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
hexamethylenetetramine

Germ cell mutagenicity
Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Mutagenicity (mammal cell test): micronucleus.
Result: negative
(IUCLID)

carcinogenicity
This information is not available.

Reproduction toxicity
This information is not available.

teratogenicity
This information is not available.

toxicity Specific target organ - single exposure
This information is not available.

toxicity Specific target organ - repeated exposure
This information is not available.

Aspiration hazard
This information is not available.

After swallowing of large amounts:
stomach / intestinal disorders, Nausea, Vomiting, pain
Damage to:
Kidney
Under certain conditions, contact with nitrites or nitric acid can lead to the formation of nitrosamines which, in animal experiments, have proven carcinogenic.
Handle in accordance with good industrial hygiene and safety practice.

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12 Ecological information

· **Toxicity**
hexamethylenetetramine

fish Species
Static test LC50 L.macrochirus (sunfish): 41 mg / l; 96 h
US EPA
Toxicity to daphnia and other aquatic invertebrates.
EC50 Daphnia magna (water flea or Daphnia): 36 g / l; 48 h
(IUCLID)
algae toxicity
IC0 Pseudokirchneriella subcapitata (green algae): 1,500 mg / l; 14 d
(IUCLID)
Toxicity to bacteria
Vibrio fischeri static test EC50:> 5,000 mg / l; 90 min
DIN 38412

· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability**
hexamethylenetetramine

biodegradability
39-47%; 28
MITI Test
Not readily biodegradable.
Theoretical oxygen demand (DTO)
2,054 mg / g
(IUCLID)
Ratio BOD / ThBOD
BOD5 2.02%
(IUCLID)

· **Behaviour in environmental systems:**
· **Components:** Hydrolysis
· **Bioaccumulative potential** - 2.18
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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13 Disposal considerations

· **Waste treatment methods**
hexamethylenetetramine

Waste treatment methods
The waste material must be disposed of in accordance with national and local regulations. Keep chemicals in their original packaging. No mixing with other waste. The treatment of the dirt container in the same manner as the product can be even carried out.
Processes regarding the return of chemicals and containers, find www.retrologistik.com or contact

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us with any questions.
The hazards and precautions on the label also apply to any residue from the left package.
Uncontrolled disposal or recycling of this packaging is not permitted and may be dangerous.
Must be incinerated in a proper installation.

· **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**
· **Recommendation:**
Packagings that may not be cleansed are to be disposed of in the same manner as the product.
The generation of waste should be avoided or minimized wherever possible. Packing waste should be recycled. Incineration or landfilling should only be considered when recycling is not feasible.
Wastes and containers must be disposed of in a safe manner. Caution when handling empty containers that have not been cleaned or rinsed. Empty containers and linings may contain product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

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14 Transport information

· **UN-Number**	
· **ADR, IMDG, IATA**	UN1328
· **UN proper shipping name**	
· **ADR, IMDG, IATA**	HEXAMETHYLENETETRAMINE
· **Transport hazard class(es)**	
· **ADR, IMDG, IATA**	
· **Class**	4.1 Flammable solids, self-reactive substances and solid desensitised explosives.
· **Label**	4.1
· **Packing group**	
· **ADR, IMDG, IATA**	III
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable solids, self-reactive substances and solid desensitised explosives.
· **Hazard identification number (Kemler code):**	40
· **EMS Number:**	F-A,S-G
· **Stowage Category**	A
· **Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	5 kg
· **Transport category**	3

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· **Tunnel restriction code**	E
· **UN "Model Regulation":**	UN 1328 HEXAMETHYLENETETRAMINE, 4.1, III

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **GHS label elements**
The product is classified and labelled according to the Globally Harmonised System (GHS).
· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
methenamine
· **Hazard statements**
Flammable solid.
May cause an allergic skin reaction.
· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment (see on this label).
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Directive 2012/18/EU**
· **Named dangerous substances - ANNEX I** None of the ingredients is listed.
· **Chemical safety assessment:** A Chemical Safety Assessment has been carried out.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H225 Highly flammable liquid and vapour.
H228 Flammable solid.
H317 May cause an allergic skin reaction.

· **Department issuing SDS:**
Metadynea Regulatory Department
Department for Product Safety
· **Contact:** Dr. Michael Gann michael.gann@metadynea.com +43 2732 899 1216

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· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Flam. Sol. 2: Flammable solids – Category 2
Skin Sens. 1: Skin sensitisation – Category 1

· *** Data compared to the previous version altered.**