SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF PRODUCT AND COMPANY

1.1. Product identifier

Commercial Product name: **Triasorb**

1.2. Use of the substance/preparation

Relevant identified uses: chemical for the petroleum industry.

1.3. Identification of the company:

Company: Limited liability company **Sintez OKA.**

Address: 606000, Russian Federation, Nizhny Novgorod region, Dzerzhinsk , East industrial area Chimmash, 7th km of East road, building 547.

1.4. Emergency Contact:

(8313) 27-25-65 7:30am – 4:15pm, (8313) 27-25-80 round-the-clock
Fax: (8313) 27-25-72
Language of the phone service – Russian.

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

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

Hazard classes and Hazard categories	Hazard Statements
Acute toxicity: Cat. 4 (oral)	H302: Harmful if swallowed.
Acute tox.: Cat. 2 (Inhalation)	H330: Fatal if inhaled.
Skin sensitization: Category 1.	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single: Exp. 1 (Inhalation).	H372: Causes damage to organs through prolonged or repeated exposure.

2.1.2 Classification according to 67/548/EEC or 1999/45/EC

T – toxic.
R22 - Harmful if swallowed.
R23 - Toxic by inhalation.
R43 - May cause sensitisation by skin contact.
R48/23 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.

2.2 Label elements

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

Product identifier:

Substances: 2,2',2"-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol
Index №: 613-114-00-6

Hazard pictograms:

Signal word: Danger.

Hazard statements:
H302: Harmful if swallowed.
H330: Fatal if inhaled.
H317: May cause an allergic skin reaction.
H372: Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements (Prevention):
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing.
P260: Do not breathe dust/gas/mist/vapours.
P284 Wear respiratory protection.
P272 Contaminated work clothing should not be allowed out of the workplace.
P264: Wash with plenty of water and soap thoroughly after handling.
P270: Do no eat, drink or smoke when using this product.

Precautionary Statements (Response):
P310 Immediately call a POISON CENTER or doctor/physician.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P352: IF ON SKIN (or hair): Wash with plenty of soap and water.
P301 + P330: IF SWALLOWED: rinse mouth.
P362: Take off contaminated clothing and wash before reuse.

Precautionary Statements (storage):
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.

Precautionary Statements (Disposal):
P501: Dispose of contents/container to hazardous or special waste collection point.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS №	EC №	Index №	Mass concent, %	Classification according		
					67/548/ EEC	Regulation (EC) No 1272/2008 [CLP]	
2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol	4719-04-4	225-208-0	613-114-00-6	60-75	T; R22,R23, R43, R48/23.	Acute toxicity: Cat. 4 (oral)	H302:
						Acute tox.: Cat. 2 (Inhalation)	H330:
						Skin sensitization: Category 1.	H317:
						Specific target organ toxicity - single: Exp. 1 (Inhalation).	H372:
Monoethanol-amine (MEA)	141-43-5	205-483-3	603-030-00-8	1 - 3	C; R20/21/22; R34	Acute tox.: Cat. 4 (Inhalation)	H332:
						Acute tox.: Cat. 4 (dermal)	H312:
						Acute toxicity: Cat. 4 (oral)	H302:
						Skin corr./irr.: Cat. 1B	H314:
						STOT single: Cat.3 (irr. to respiratory syst.)	H335:
						Aquatic Chronic 3	H412:
Water	7732-18-2	231-791-2	—	Up to 100	—	—	—

Hazard symbols deciphering is given in section 16.

SECTION 4: FIRST-AID MEASURES

4.1 Description of first aid measures
4.1.1 General informations:
Immediately remove contaminated clothing.
4.1.2 Following inhaled: Keep patient calm, remove to fresh air, seek medical attention.
4.1.3 Following skin contact: Wash thoroughly with soap and water.
4.1.4 Following eye contact: Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.
4.1.5 Following ingestion: Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed	Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
4.3 Indication of any immediate medical attention and special treatment needed	Treatment: Treat according to symptoms (decontamination, vital functions), no known specificantidote.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:	Water spray, dry powder, foam.
Unsuitable extinguishing media:	---

5.2 Special hazards arising from the substance or mixture:

Hazardous combustion products:	Harmful vapours. The substances/groups of substances mentioned can be released in case of fire. Products of combustion are carbon oxides and nitrogen oxides, blood poison. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions.

5.3 Advice for fire-fighters:
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

5.4 Additional information:
Contaminated extinguishing water must be disposed of in accordance with official regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:
6.1.1 For non-emergency personnel:

Protective equipment:	Do not get in eyes, on skin, on clothing. Use personal protective clothing. Information regarding personal protective measures see, chapter 8.
Emergency procedures:	Provision of sufficient ventilation; the need to evacuate the danger area.

6.1.2 For emergency responders:
*Personal protective equipment: S*elf-contained breathing apparatus and chemical-protective clothing.

6.2. Environmental precautions:
Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

6.3. Methods for cleaning up or taking up:
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material. Dispose of absorbed material in accordance with regulations.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

7.1.1 Protective measures:
No special measures necessary provided product is used correctly.

Fire preventions:	No special precautions necessary.
Aerosol preventions:	Ensure thorough ventilation of store and work areas.
Environmental precautions:	Hermeticity of equipment, product storage tanks, containers.

7.1.2 Advice on general occupational hygiene:
Put on appropriate personal protective equipment (see Section 8).
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist.

7.2 Conditions for safe storage, including any incompatibilities:
Suitable materials for containers: Stainless steel 1.4401, Stainless steel 1.4301 (V2), Glass reinforced plastic (GRP), High density polyethylene (HDPE), carbon steel (iron), tin (tinplate), glass, Low density polyethylene (LDPE).

Further information on storage conditions:
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.
Use appropriate containment to avoid environmental contamination.

Storage stability: Storage temperature: -5 - 40 °C.
Protect from temperatures above: 40 °C.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ensure preliminary and periodic medical examinations

8.1 Components with workplace control parameters:

141-43-5: 2-aminoethanol
TWA value 2.5 mg/m3 ; 1 ppm (OEL (EU)) indicative.
STEL value 7.6 mg/m3 ; 3 ppm (OEL (EU)) indicative.
CLV 0,5 mg/m3 (MAC (RU)).
Skin Designation (OEL (EU))
The substance can be absorbed through the skin.

8.2 DNEL/PNEC-values *for 4719-04-4: 2,2',2''-(hexahydro-1,3,5-triazine-1,3,5-triyl)triethanol*

DNEL -values:

DNEL for workers	Exposure route	Exposure frequency
19 mg/m³	Inhalation	Long-term exposure - systemic effects

PNEC-values:

Compartments	PNEC
PNEC water	
PNEC aqua (freshwater):	0.0066 mg/l
PNEC aqua (marine water):	0.00066 mg/l
PNEC aqua (intermittent releases):	0.066 mg/l
PNEC sediment	
PNEC sediment (freshwater):	0.0304 mg/kg
PNEC sediment (marine water):	0.00304 mg/kg
PNEC soil	
PNEC soil:	0.00219 mg/kg
PNEC sewage treatment plant	
PNEC STP:	5.5 mg/l

8.3 Exposure controls:
The full range of specific risk management measures to be taken during use in order to minimise worker and environmental exposure.

8.3.1 Appropriate engineering controls:
Hermeticity of equipment, product storage tanks, containers.
Ensure thorough ventilation of store and work areas.
Periodically control the content of harmful substances in the air of the working zone.
Handle in accordance with good industrial hygiene and safety practice.

8.3.2 Personal protective equipment:
8.3.2.1 Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166).

8.3.2.2 Skin protection:

Hand protection
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) and other Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

8.3.2.3 Respiratory protection:
Suitable respiratory protection for lower concentrations or short-term effect: Particle filter with high efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P3 or FFP3).

8.3.2.4 General safety and hygiene measures:
Do not breathe vapour/spray.Avoid contact with the skin, eyes and clothing.
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

8.3.3 Exposure controls of environmental impact:
Discharge into the environment must be avoided.

8.3.4 Consumer exposure control:
The product is not intended for use in the home.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Property	Results	Remark
Physical state at 20°C and 1013 hPa:	liquid	
Form:	viscous	
Colour:	colourless to yellowish	
Odour:	organic	
pH value:	> 9	
Boiling point:	110.1 °C (1013.25 hPa)	
Density:	1.10-1.16 g/cm3 at 20 °C	
Vapour pressure:	14.8 mbar (20 °C) 20.2 mbar (25 °C) 81.5 mbar (50 °C)	Analytical purity: ca. 79 g/100 g (contains about 18 g/100 g water) (Directive 92/69/EEC, A.1)
Surface tension	Based on chemical structure, surface activity is not to be expected.	
Water solubility	> 1000g/l at 20°C	(internal method)
Solubility (qualitative) solvent(s):	alcohols miscible in all proportions	
Partition coefficient n-octanol/water (log value)	log Pow < -2.3 (at pH = 5 and T = 24°C +/- 1°C) log Pow = -2.0 (at pH = 7 and T = 24°C +/- 1°) log Pow = -1.3 (at pH = 9 and T = 24°C +/- 1°C)	EU Method A.8 (Partition Coefficient) Cited as Directive 92/69/EEC, A.8
Flash point	Non-flammable.	(DIN EN 22719; ISO 2719, closed cup)
Flammability	does not ignite	
Ignition temperature:	not applicable	
Explosive properties	not explosive	

Fire promoting properties:	not fire-propagating	
Self-ignition	not self-igniting	
Viscosity, dynamic:	44-410 mPa.s (20 ºC)	(DIN EN ISO 3219)
Viscosity, kinematic:	40-350 mm2/s (20 °C)	
Hygroscopy:	Non-hygroscopic	
Grain size distribution:	The substance / product is marketed or used in a non solid or granular form.	

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

10.2. Chemical stability
The product is stable if stored and handled as prescribed/indicated.

10.3 Possibility of hazardous reactions:
No hazardous reactions when stored and handled according to instructions.

10.4 Conditions to avoid:
Avoid heat. See MSDS section 7 - Handling and storage.

10.5. Incompatible materials
Avoid contact with strong acids and oxidisers.

10.6 Hazardous decomposition products
Oxides of carbon and nitrogen evolved in fire.
No hazardous decomposition product if stored and handled as prescribed/indicated.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute toxicity:

	Effect dose	**Method**
Acute oral toxicity	LD 50: >500 - < 2.000 mg/kg	Rat
Acute dermal toxicity	LD 50: > 2000 mg/kg	Rat
Acute inhalative toxicity	LC 50: 0.371 mg/l	Rat (OECD Guideline 403)

Skin corrosion / irritation:
Skin irritation / corrosion: not irritating (OECD Guideline 404).

Serious eye damage/irritation:
Eye irritation: irritant (OECD Guideline 405).

Respiratory or skin sensitisation:
Experimental/calculated data: sensitizing effect in animal tests.

CMR-effects:

Mutagenicity:	Gene mutation: negative.
Carcinogenicity:	Result (carcinogenicity): negative.
Reproductive toxicity	Assessment of teratogenicity: The Developmental toxicity NOAEL is greater than or equal to 750 mg/kg/day.
Specific target organ toxicity (single exposure)	H372: Causes damage to organs through prolonged or repeated exposure. Affected organs: respiratory system. Route of exposure: Inhalation aerosol.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Ecotoxicity:

Longterm-Ecotoxicity:

Chronic toxicity to fish: Study does not need to be conducted.

Chronic toxicity to aquatic invertebrates: Study does not need to be conducted.

Assessment of terrestrial toxicity: Study scientifically not justified.

Acute toxicity:

	Effect dose	Exposure time	Species	Method	Evaluation
Acute fish toxicity	LC50	96 h	Brachydanio rerio (new name: Danio rerio)	OECD Guideline 203	10-100 mg/L
Acute invertebrates toxicity	EC50	48 h	Daphnia magna	OECD Guideline 202	10-100 mg/L
Acute microorganisms toxicity	EC20	30 min	Activated sludge	OECD Guideline 209 (static)	> 100 mg/L

12.2 Persistence and degradability:
The substance is readily biodegradable according to OECD criteria.

Hydrolysis:
The test item was completely hydrolyzed after 2 h, 50°+/-0.5°C at pH 4, pH 7 and pH9 according to the precision of the analytical method used.

Elimination information:
> 70 % DOC reduction (OECD 301 A (new version)). Readily biodegradable.

12.3 Bioaccumulative potential:
No significant accumulation in organisms is expected as a result of the distribution coefficient of n-octanol/water (log Pow).

12.4 Mobility in soil
Assessment transport between environmental compartments:
The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

12.5 PBT or vPvB Properties Assessment:
According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification.

12.6 Additional information:
Sum parameter
Chemical oxygen demand (COD): 1,120 mg/g.
Biochemical oxygen demand (BOD): 800 mg/g.
Other ecotoxicological advice: Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Incinerate in suitable incineration plant, observing local authority regulations.

Waste codes / waste designations according to EWC / AVV:
A waste code in accordance with the European waste catalog (EWC) cannot be specified, due to dependence on the usage.
The waste code in accordance with the European waste catalog (EWC) must be specified in cooperation with disposal agency/manufacturer/authorities.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: TRANSPORT INFORMATION

Land transport (ADR/RID):	Hazard class:	**6**
	Packing group:	**II**
	UN number:	**UN 2810**
	Hazard label:	**6.1**
	Proper shipping name:	**TOXIC LIQUID, ORGANIC, N.O.S. (contains 1,3,5-TRIS(HYDROXYETHYL)HEXAHYDROTRIAZINE)**
Sea transport (IMDG):	Hazard class:	**6**
	Packing group:	**II**
	UN number:	**UN 2810**
	Hazard label:	**6.1**
	Marine pollutant:	**No**
	Proper shipping name:	**TOXIC LIQUID, ORGANIC, N.O.S. (contains 1,3,5-TRIS(HYDROXYETHYL)HEXAHYDROTRIAZINE)**
Air transport (ICAO-IATA):	Hazard class:	**6**
	Packing group:	**II**
	UN number:	**UN 2810**
	Hazard label:	**6.1**
	Proper shipping name:	**TOXIC LIQUID, ORGANIC, N.O.S. (contains 1,3,5-TRIS(HYDROXYETHYL)HEXAHYDROTRIAZINE)**

SECTION 15: REGULATORY INFORMATION

15.1 Regulations of the European Union (labeling):

Hazard determining component for labelling:

2,2',2"-(HEXAHYDRO-1,3,5-TRIAZINE-1,3,5-TRIYL)TRIETHANOL

EC№: 225-208-0

Regulations:
- Directive 67/548/EEC;
- Regulation (EC) No 1272/2008.

S-phrases for product are in accordance with the Directive 67/548/EEC of June 27, 1967 for harmonization of legal and administrative regulations on classification, packing and labeling of dangerous substances:

S-phrases:

S24	- avoid contact with skin;
S37	- wear suitable gloves;
S45	- in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 16: OTHER INFORMATION

16.1 Key source for data: Web-site ECHA.

16.2 Deciphering of the hazard symbols, R-phrases and hazard statements listed in section 3.

Hazard symbols:

T	– toxic;
C	– corrosive.

R-phrases:

22	– harmful if swallowed;
23	– toxic by inhalation;
43	– may cause sensitisation by skin contact;

48/23 – harmful: danger of serious damage to health by prolonged exposure through inhalation.
20/21/22 – harmful by inhalation, in contact with skin and if swallowed;
34 – causes burns;

Hazard statements:
H302: Harmful if swallowed.
H330: Fatal if inhaled.
H317: May cause an allergic skin reaction.
H372: Causes damage to organs through prolonged or repeated exposure.
H332: Harmful if inhaled.
H312: Harmful in contact with skin.
H314: Causes severe skin burns and eye damage
H335: May cause respiratory irritation.
H412: Harmful to aquatic life with long lasting effects.

16.3 Further information:

The above information is presented herein in good faith and is based on the current knowledge on the material. Standard requirements may be changed and may differ in different locations of the companies. Providing the compliance with the requirements of state and local laws is the responsibility of the Buyer.

Technical Director A.M. Burtsev