SAFETY DATA SHEET

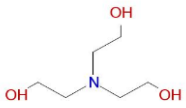
1. IDENTIFICATION OF PRODUCT AND COMPANY

1.1. Identification of the product:

Triethanolamine 99 %

Reach Registration number:	01-2119486482-31-0007
EC number:	203-049-8
CAS number:	102-71-6
CAS name:	Ethanol, 2,2',2"-nitrilotris-
IUPAC name:	2,2',2"-nitrilotriethanol
Molecular formula:	C6H15NO3
Molecular weight:	149.2
Acronym:	TEA

Structural formula:



1.2. Use of the product:

As no exposure scenarios according to Article 14.4 of Regulation (EC) No. 1907/2006 are required, no detailed information on use is given.

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

1.5. Person responsible for placement of the product in the market within the European Community:

Independent Petroleum Distribution SA
Andrey Bachev
118, Drève Richelle postal code : 1410, Waterloo , Belgium
Phone: +3223514221
+41417402427
Fax: +41417402494
mail to: ab@ipd-sa.com

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance:

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

Not classification.

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

Not aware of any special risks.

2.2 Label elements

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

Product identifier:
Substances: Triethanolamine.
Index- number*:* —
EC №: 203-049-8

Hazard components for labeling: Triethanolamine.
Hazard pictograms: no.
Signal word: no.
Hazard statements: no.

3. INFORMATION ON INGREDIENTS

Name	CAS №	EC №	Index №	Reach Registration number	Mass concent, %	Classification according	
						67/548/ EEC	Regulation (EC) No 1272/2008 [CLP]
Triethanol-amine (TEA)	102-71-6	203-049-8	—	01-2119486482-31-0007	≥ 99	—	—

4. FIRST-AID MEASURES

4.1 Description of first aid measures
4.1.1 General informations:
Remove contaminated clothing.
4.1.2 Following inhaled: Keep patient calm, remove to fresh air.
4.1.3 Following skin contact: Wash off thoroughly with ample water.
4.1.4 Following eye contact: Wash affected eyes for at least 15 minutes under running water with eyelids held open.
4.1.5 Following ingestion: Rinse mouth and then drink plenty of water.
4.1.6 Notes for the doctor: Do not induce vomiting.
4.2 Most important symptoms and effects, both acute and delayed: Symptoms: No significant symptoms are expected due to the non-classification of the product.
4.3 Indication of any immediate medical attention and special treatment needed: Treatment: Symptomatic treatment (decontamination, vital functions).

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media:
Suitable extinguishing media: Water spray, dry powder, foam, carbon dioxide.
Unsuitable extinguishing media: ----

5.2 Special hazards arising from the substance or mixture:
Hazardous combustion products: Products of combustion are carbon oxides and nitrogen oxides, blood poison.

5.3 Advice for fire-fighters:
Wear self-contained breathing apparatus and chemical-protective clothing.
Do not approach to burning containers. Cool the containers with water from the maximum possible distance. Precipitate the generated gases and vapors with sprayed water.

5.4 Additional information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

6.1.1 For non-emergency personnel:
Protective equipment: The wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the SDS) to prevent any contamination of skin, eyes and personal clothing;
Handle in accordance with good industrial hygiene and safety practice.
Emergency procedures: Removal of ignition sources, 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:
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 (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling:

7.1.1 Protective measures:

Fire preventions:	Sources of ignition should be kept well clear. Keep away from sources of ignition - No smoking.
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:
Not to eat, drink and smoke in work areas.
Wash hands after use.
Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:
Segregate from acids and acid forming substances.
Further information on storage conditions: Containers should be stored tightly sealed in a dry place.
Storage stability: Storage temperature: 20 - 40 °C.
Storage duration: 12 Months.
May discolour after lengthy storage.
Data on the storage life specified in the safety data are not a contractual guarantee of the properties of the product.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ensure preliminary and periodic medical examinations.

8.1. DNEL/PNEC-values:

DNEL -values:

DNEL		**Exposure route**	**Exposure frequency**
for workers	**for the general population**		
6.3 mg/kg bw/day	3.1 mg/kg bw/day	Dermal	Long-term - systemic effects
5 mg/m³	1.25 mg/m³	Inhalation	Long-term - systemic effects
-	13 mg/kg bw/day	Oral	Long-term - systemic effects
5 mg/m³	1.25 mg/m³	Inhalation	Long-term - local effects

PNEC-values:

Compartments	**PNEC**
PNEC water	
PNEC aqua (freshwater):	0.32 mg/L
PNEC aqua (marine water):	0.032 mg/L
PNEC aqua (intermittent releases):	5.12 mg/L
PNEC sediment	
PNEC sediment (freshwater):	1.7 mg/kg sediment dw
PNEC sediment (marine water):	0.17 mg/kg sediment dw
PNEC soil	
PNEC soil:	0.151 mg/kg soil dw
PNEC sewage treatment plant	
PNEC STP:	10 mg/L

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

8.2.1 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.

8.2.2 Personal protective equipment:
8.2.2.1 Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166).

8.2.2.2 Skin protection:

Hand protection
Suitable chemical resistant safety gloves (EN 374) 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), butyl rubber (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.

Body protection:
Closed work clothing.

8.2.2.3 Respiratory protection:
Wear respiratory protection if ventilation is inadequate.
Use in case of accidents – filter gas-masks to ensure protection against vapors of organic compounds.

8.2.2.4 General safety and hygiene measures:
Handle in accordance with good industrial hygiene and safety practice.

8.2.3 Exposure controls of environmental impact:
Discharge into the environment must be avoided.
To execute the full range of specific RMM and OC required to fulfill commitment under community environmental legislation.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Results
Physical state at 20°C and 1013 hPa	The substance is an organic, viscous, colourless to plate-yellow liquid w ith slight ammoicao odour
Melting / freezing point	20.5 °C
Boiling point	336.1 °C at 1013.25 hPa
Relative density	1.125 g/cm3 at 20 °C
Vapour pressure	< 0.0003 hPa at 21 °C
Surface tension	not surface active
Water solubility	>1000 g/l at 20 °C
Partition coefficient n-octanol/water (log value)	-2.3 at 25 °C / pH = 7.1
Flash point	179 °C (cc)
Flammability	Combustibel, but not easily ignitable The substance has no pyrophoric properties and does not liberate flammable gases on contact with water.
Explosive properties	non explosive
Self-ignition temperature	324 °C

Oxidising properties	no oxidising properties
Granulometry	not applicable
Stability in organic solvents and identity of relevant degradation products	not relevant
Dissociation constant	7.86 at 25 °C
Viscosity	934 mPa_s at 20 °C

10. STABILITY AND REACTIVITY

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

10.2 Chemical stability:
Triethanolamine is stable when rules of storage and use are observed.

10.3. Possibility of hazardous reactions
Reacts with acids. Reacts with oxidizing agents. Reacts with acid chlorides. Reacts with halogenated compounds. The progress of reaction is exothermic. Incompatible with acid chlorides and acid anhydrides.

10.4. Conditions to avoid
Avoid extreme temperatures. See MSDS section 7 - Handling and storage.

10.5. Incompatible materials
Substances to avoid: oxidizing agents, acids, acid-forming substances.

10.6 Hazardous decomposition products
Carbon oxides and nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

11.1.1 Short-term effects:

Acute toxicity:

	Effect dose	**Remark**
Acute oral toxicity	LD50: 6400 mg/kg (Rats)	(Test-BASF)
Acute dermal toxicity	LD50 > 2000 mg/kg (Rabbit)	EPA (1989a)
Acute inhalative toxicity	—	(Test-BASF) Inhalation exposure for 8 hours to vapour saturated with TEA failed to cause any deaths in rats (LC50 was not determined).

Assessment of acute toxicity:
Acute toxicity data indicate low toxicity (virtually nontoxic after a single ingestion; virtually nontoxic after a single skin contact; the inhalation of a highly saturated vapor-air mixture represents no acute hazard).

Skin corrosion / irritation:
Skin irritation / corrosion: Not irritating to the skin.
Experimental/calculated data: Skin corrosion/irritation rabbit: non-irritant (OECD Guideline 404).

Serious eye damage/irritation:
Not irritating to the eyes.

11.1.2 Respiratory or skin sensitisation:
Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.
Experimental/calculated data (guinea pig: Non-sensitizing (OECD Guideline 406).

11.1.3 CMR-effects:

Mutagenicity: TEA did not cause gene mutations.
Genetic toxicity: negative.

Carcinogenicity: Assessment of carcinogenicity:
Under certain conditions the substance can form nitrosamines. Nitrosamines are carcinogenic in animal studies. The substance showed no carcinogenic acitivity in animals after chronic administration to the skin.

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Specific target organ toxicity (repeated exposure): Assessment of repeated dose toxicity:
No adverse effects were observed after repeated exposure in animal studies.

12. ECOLOGICAL INFORMATION

Due to the results of the aquatic toxicity studies and the relevant mammalian toxicity studies, the substance is not toxic (not T).

12.1. Ecotoxicity:

Acute toxicity:

	Effect dose	Exposure time	Species	Method	Evaluation
Acute freshwater fish toxicity	LC50	96 h	Pimephales promelas	Equivalent or similar to APHA method (1980).	11800 mg/L
Acute daphnia toxicity	EC50	48 h	Ceriodaphnia dubia	ASTM Designation E1192 (1988).	609,88 mg/L
Acute algae toxicity	EC50/LC50	72 h	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)	German Industrial Standard DIN 38412 part 9 (static)	512 mg/L

Longterm-Ecotoxicity:

	Effect dose	Exposure time	Species	Method	Evaluation
Long-term toxicity to aquatic invertebrates	NOEC	(21 день)	Daphnia magna	German Federal Environmental Agency internal method, comparable to OECD TG 211.	16 мг / л

The chemical is considered to be acutely not harmful to fish.
With high probability TEA is acutely not harmful to aquatic invertebrates.
With high probability TEA is acutely not harmful to algae.
With high probability TEA has no chronic effects to aquatic invertebrates.

12.2 Persistence and degradability:

Due to the results of Degradation, the substance is not persistent (not P) and not very persistent (not vP) in the environment.
The substance is readily biodegradable according to OECD criteria.

Physical- and photo-chemical elimination:

Hydrolysis: According to structural properties, hydrolysis is not expected/probable.

Phototransformation in air: After evaporation or exposure to the air, the substance will be rapidly degraded by indirect photochemical processes.

in water: Half-life in water: 342 days.

Biodegradation in water:
90 - 100 % DOC removal (19 d) (OECD Guideline 301 E).
Readily biodegradable (according to OECD criteria).

12.3 Bioaccumulative potential:

Does not accumulate in organisms.
Bioconcentration factor: < 0.4 (42 d), Cyprinus carpio (OECD Guideline 305 C) Literature data.
Bioaccumulation the substance is not bioaccumulative (not B) and not very bioaccumulative (not vB).

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.

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.

14. TRANSPORT INFORMATION

Land transport:

Land transport (ADR/RID/GGVSE):	In accordance with the transport regulation the product is not a hazardous cargo.
Sea transport (IMDG - Code/GGVSee):	In accordance with the transport regulation the product is not a hazardous cargo.
Air transport (ICAO-IATA/DGR):	In accordance with the transport regulation the product is not a hazardous cargo.

15. REGULATORY INFORMATION

15.1 European Community regulations (labeling):

EC No: 203-049-8

The substance is not listed on Annex I of Directive 67/548/EEC.

Triethanolamine does not require prior labeling according to EC Directives.

15.2 Chemical Safety Assessment:

For Triethanolamine has been carried out a chemical safety assessment.

16. OTHER INFORMATION

16.1 Key source for data: CHEMICAL SAFETY REPORT.

16.2 Further information:

No exposure scenarios according to Article 14.4 of Regulation (EC) No. 1907/2006 are required.

Vertical lines in the left hand margin indicate an amendment from the previous version.

The information given above is presented on a scrupulous basis and represents the best currently available information. No conclusions should be made based on this data concerning the quality or suitability of this product for definite application. Regulatory requirements may change and differ according to a company's location. Customer should provide compliance with state and local legal requirements.

Technical director A.M. Burtsev