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Safety Data Sheet

1. Identification of the substance or mixture and of the supplier

Product name : Triethylamine
Product number : 34805-xx
Name of supplier : NACALAI TESQUE, INC.
Adress : 498 Higashitamaya-cho, Nijo Karasuma, Nakagyo-ku, Kyoto, JAPAN
Division : Kyoto Factory
Phone : +81 75 251 1730
FAX : +81 75 251 1763
SDS No. : GHS-34805E-8

2. Hazards identification

GHS hazard class and category

PHYSICAL HAZARDS	Explosives	-
	Flammable gases	-
	Aerosols	-
	Oxidizing gases	-
	Gases under pressure	-
	Flammable liquids	Category 2
	Flammable solids	-
	Self-reactive substances and mixtures	-
	Pyrophoric liquids	-
	Pyrophoric solids	-
	Self-heating substances and mixtures	-
	Substances and mixtures which, in contact with water, emit flammable gases	-
	Oxidizing liquids	-
	Oxidizing solids	-
	Organic peroxides	-
	Corrosive to metals	-
	Desensitized explosives	-
HEALTH HAZARDS	Acute toxicity - oral	Category 4
	Acute toxicity - dermal	Category 3
	Acute toxicity - inhalation (gases)	-
	Acute toxicity - inhalation (vapours)	Category 4
	Acute toxicity - inhalation (dusts and mists)	-
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Respiratory sensitization	-
	Skin sensitization	-
	Germ cell mutagenicity	-
	Carcinogenicity	-
	Reproductive toxicity	-
	Specific target organ toxicity - single exposure	Category 1, Category 3
Specific target organ toxicity - repeated exposure	Category 2	
Aspiration hazard	-	
ENVIRONMENTAL HAZARDS	Short - term (acute) hazardous to the aquatic environment	Category 2
	Long - term (chronic) hazardous to the aquatic environment	Category 3
	Hazardous to the ozone layer	-

- : Off the subject/not possible to classify

SYMBOL



SIGNAL WORD

Danger

HAZARD STATEMENTS	Highly flammable liquid and vapour Harmful if swallowed Toxic in contact with skin Harmful if inhaled Causes severe skin burns and eye damage Causes serious eye damage Causes damage to organs (central nervous system) May cause respiratory irritation May cause damage to organs through prolonged or repeated exposure (respiratory organs) Toxic to aquatic life Harmful to aquatic life with long lasting effects
PREVENTION	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting/etc.] equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.
RESPONSE	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER/doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF exposed or concerned: Call a POISON CENTER/doctor. Get medical advice/attention if you feel unwell. Take off immediately all contaminated clothing and wash it before reuse. In case of fire: Use appropriate extinguishing media to extinguish.
STORAGE	Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.
DISPOSAL	Dispose of contents/container in accordance with regulation.

3. Composition/information on ingredients

Substance/mixture : Substance

Chemical identity or ingredient name (Synonyms)	Chemical formula	CAS RN [®]	Composition %	ENCS No.	ISHL No.
Triethylamine	(C ₂ H ₅) ₃ N	121-44-8	>=99.0	(2)-141	listed

Impurities which are themselves classified and which contribute to the classification of the substance :

None

4. First-aid measures

Inhalation :

Remove to fresh air and keep at rest. If breathing is weak, irregular or has stopped, open his airway, loosen his collar and belt and administer artificial respiration. Call a poison center/doctor if necessary.

Skin contact :

Take off all contaminated clothing and shoes. Wash immediately with plenty of water. Get medical advice/attention as soon as possible.

Eye contact :

Rinse immediately the affected eyes cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical advice/attention as soon as possible.
Remove all chemicals from contact with the victim's eyes immediately. A

Ingestion :

Call immediately a POISON CENTER/doctor. Do NOT induce vomiting. Rinse mouth with water, and give one or two glasses of water to drink.

Most important sign symptoms of acute and late symptoms :

No data available

Precaution for first-aid persons :

Wear rubber gloves and air-tight safety goggles.

Information for the physician :

Effects of exposure to substance may be delayed.

5. Fire-fighting measures

Suitable extinguishing media :

water spray, foam, carbon dioxide, powder, dry sand

Incompatible extinguishing media :

straight streams

Specific hazards arising from the chemical (and with regard to fire-fighting measures) :

During a fire, irritating and/or highly toxic gases may be generated by thermal decomposition or combustion.

Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

Specific fire-fighting measures :

Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.

Dry chemical powder or dry sand should be used for small fires.

Foam extinguisher is effective for a large scale fire.

Special protective equipment and precautions for fire-fighters :

Fire-fighters should wear proper protective equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures :

Evacuate non-essential personnel. Wear appropriate protective clothing.

Environmental precautions :

Do NOT let this product enter the environment.

Methods and materials for containment and clean up :

For small spill, absorb spill with dry sand, soil or suitable absorbent and move to a chemical waste container. For large spill, prevent leakage by surrounded with earth and lead the spill to a safety place to collect.

Preventive measures for secondary accident :

Eliminate all sources of ignition and ventilate the area.

Prepare extinguishers before catching fire.

Shut off the leakage source and stop leak if you can do it without risk.

7. Handling and storage

Precautions for safe handling :

Countermeasure technique(s) :

Do not shock, overturn, drop, or drag containers.

Use with an enclosed system or a local exhaust ventilation.

Fire is prohibited.

Avoid contact with eyes, skin and clothing.

Wear suitable personal protective equipments.

Safety measures/incompatibility :

Handle not to generate aerosol or dust.

Incompatible contact(s) :

See [10. Stability and Reactivity].

Storage :

Conditions for safe storage, including any incompatibilities :

Countermeasure technique(s) :

Store in the Dangerous Goods Warehouse.

Incompatibilities :

See [10. Stability and Reactivity].

Recommendation for storage :

Protect from direct sunlight. Keep tightly closed in cool place.

Incompatible storage condition :

Keep away from incompatible material(s).

Fire is strictly prohibited.

Recommended container and packaging materials :
glass, etc.

8. Exposure control/personal protection

Control value/Adopted value :

Chemical identity	Control value (Japan)	Adopted value (JSOH)	Adopted value (ACGIH)
Triethylamine	Not established	Not established	TWA 0.5 ppm STEL 1 ppm (Skin)

Appropriate engineering controls :

Keep source tightly closed or install local exhaust ventilation. Provide shower and vanity unit nearby and make clear the location of these.

Individual protection measures, such as personal protective equipment (PPE) :

Respiratory protection :

Gas masks for organic compounds

Hand protection :

Impervious glove

Eye protection :

Protective eyeglasses or chemical safety goggles

Skin and body protection :

Impervious clothing such as apron, boots, or whole-body suits

9. Physical and chemical properties

Physical state :	Liquid
Color :	Colorless to very pale yellow
Odor :	Characteristic odor
Melting point/freezing point :	-115 C
Boiling point, initial boiling point and boiling range :	89 C
Flammability :	No data available
lower flammability or explosive limits :	1.2 vol%
Upper flammability or explosive limits :	8.0 vol%
Flash point :	-17 C (c. c.)
Auto-ignition temperature :	230 C
Decomposition temperature :	No data available
pH :	approx. 13 (100 g/L, 15 C)
Kinematic viscosity :	No data available
Solubility in water :	Freely soluble
Solubility(ies) in solvent :	Very soluble in ethanol, diethyl ether.
Octanol/water partition coefficient (log Pow) :	1.45
Vapor pressure :	7.2 kPa (20 C)
Density/relative density :	0.73 g/mL (20 C)
Relative gas density (air=1) :	3.5
Particle characteristics :	No data available
Other data :	No data available

10. Stability and reactivity

Reactivity :

No data available

Chemical stability :

This product is considered a stable material under normal and anticipated storage and handling conditions.

Possibility of hazardous reactions :

Reacts with oxidants.

Reacts with acids.

Conditions to avoid :

sunlight, heat, contact with incompatible materials

Incompatible materials :

oxidants, acids

Hazardous decomposition products (except for carbon monoxide, carbon dioxide and water) :
nitrogen oxides

11. Toxicological information

(Insufficient data are available on the effect of this substance on human health, therefore utmost care must be taken.)

Acute toxicity :

Harmful if swallowed
Toxic in contact with skin
Harmful if inhaled

Chemical identity	Oral	Dermal	Inhalation
Triethylamine	rat LD50 460 mg/kg	rabbit LD50 415 mg/kg	rat LC50 2600 ppm/4H (vapours)

Skin corrosion/irritation :

Causes severe skin burns and eye damage

Serious eye damage/eye irritation :

Causes serious eye damage

Respiratory sensitization :

No data available

Skin sensitization :

No data available

Germ cell mutagenicity :

No data available

Carcinogenic effects :

Chemical identity	Carcinogenicity Assessment
Triethylamine	ACGIH-A4 ; Not Classifiable as a Human Carcinogen

Toxicity for reproduction :

No data available

Specific target organ systemic toxicity (single exposure) :

Causes damage to organs (central nervous system)
May cause respiratory irritation

Specific target organ systemic toxicity (repeated exposure) :

May cause damage to organs through prolonged or repeated exposure (respiratory organs)

Aspiration hazard :

No data available

Other information :

No data available

12. Ecological information

(Insufficient data are available on the effect of this substance on the environment, therefore utmost care must be taken.)

Ecotoxicity :

Toxic to aquatic life
Harmful to aquatic life with long lasting effects

Chemical identity	Fish toxicity
Triethylamine	Algae (<i>Pseudokirchneriella subcapitata</i>) ErC50/72H 7.97 mg/L Algae (<i>Pseudokirchneriella subcapitata</i>) NOEC/72H 1.1 mg/L Crustacea (<i>Ceriodaphnia dubia</i>) NOEC/7D 7.1 mg/L Fish (<i>Oryzias latipes</i>) LC50/96H 24 mg/L

Persistence and degradability :

Hardly biodegradability
28 % by BOD

Bioaccumulative potential :

Low or non residuality

Mobility in soil :

No data available

Hazard to the ozone layer :

No data available

Other adverse effects :

No data available

13. Disposal considerations

Contact a licensed professional waste disposal service to dispose of this material. Comply with all country, national and local regulations.

14. Transport information

UN number : 1296

UN Proper shipping name : Triethylamine

Class or Division : 3

Subsidiary risk : 8

Packing group : II

Marine pollutant : No

Land regulation information : Controlled under ADR/RID's regulations.

Marine regulation information : Controlled under IMDG's regulations.

Aviation regulation information : Controlled under ICAO/IATA's regulations.

Special precautions with transport or conveyance :

Protect from direct sun light in transportation, and confirm the container does not leak. Carefully load it onto a transporter without dropping, overturning or damaging so that it will stably stays on the transporter.

Emergency Response Guidebook - Number (ERG No.) : 132

15. Regulatory information

Compliance with national and local regulations is the responsibility of the user.

16. Other information

DISCLAIMER :

For R&D use only. Not for drug, household or other uses.

WARRANTY :

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.