SAFETY DATA SHEET

TCI EUROPE N.V.

Revision number: 1.1

According to 1907/2006/EC, Article 31

| SECTION 1: Identification of the s | substance/mixture and c | of the company/undertaking |
|--|--|--|
| .1 Product identifiers | | |
| Product name: | 2-(Ethylamino)ethanol | |
| Product code: | E0057 | |
| .2 Relevant identified uses of the sul Identified uses: | bstance or mixture and use Reagents. | s advised against |
| .3 Details of the supplier of the safet | v data sheet | |
| Supplier: | , | |
| TCI EUROPE N.V. | | |
| Boerenveldseweg 6 | | |
| Haven 1063 | | |
| B-2070 Zwijndrecht Telephone: +32(0)3 735 07 0 | 0 | |
| E-mail: sales-eu@tcichemica | | |
| .4 Emergency telephone number: | +32(0)70 245 245 | |
| SECTION 2: Hazards identificatio | n | |
| 2.1 Classification of the substance or | | |
| Acute toxicity (Oral) | | Category 4 |
| Acute toxicity (Dermal) | | Category 3 |
| Skin corrosion/irritation | | Category 1B |
| | | |
| Serious eye damage/eye irritation 2.2 Label elements Pictograms or hazard symbols | 1 | Category 1 |
| .2 Label elements | 1 | Category 1 |
| 2.2 Label elements Pictograms or hazard symbols Signal word | Danger | |
| 2.2 Label elements Pictograms or hazard symbols | Danger H302-Harmful if swallow | ed. |
| 2.2 Label elements Pictograms or hazard symbols Signal word | Danger H302-Harmful if swallow H311-Toxic in contact wi | ed. th skin. |
| 2.2 Label elements Pictograms or hazard symbols Signal word Hazard statements | Danger H302-Harmful if swallow H311-Toxic in contact wi H314-Causes severe ski | ed. th skin. n burns and eye damage. |
| 2.2 Label elements Pictograms or hazard symbols Signal word | Danger H302-Harmful if swallow H311-Toxic in contact wi H314-Causes severe ski P260-Do not breathe dus | ed. th skin. n burns and eye damage. |
| 2.2 Label elements Pictograms or hazard symbols Signal word Hazard statements | Danger H302-Harmful if swallow H311-Toxic in contact wi H314-Causes severe ski P260-Do not breathe dus P280-Wear protective glo | ed. th skin. n burns and eye damage. sts or mists. |
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| 2.2 Label elements Pictograms or hazard symbols Signal word Hazard statements Precautionary statements 2.3 Other hazards Results of PBT and vPvB assessments | Danger H302-Harmful if swallow H311-Toxic in contact wi H314-Causes severe ski P260-Do not breathe dus P280-Wear protective gld P301+P330+P331+P310 POISON CENTER or do P303+P361+P353+P310 Rinse skin with water or clothing before reuse. P304+P340+P310-IF INI Immediately call a POIS0 P305+P351+P338+P310 lenses, if present and ea | ed. th skin. n burns and eye damage. sts or mists. oves, protective clothing, face protection. I-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately cal ctor. I-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately cal ctor. I-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately cal ctor. I-IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately cal ctor. I-IF IN EYES: Rinse cautiously with water for several minutes. Remove cont |
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Revision date: 10/03/2018

SECTION 3: Composition/information on ingredients 3.1 Substances

| 3.1 Substances | |
|-------------------|-----------------------|
| Components: | 2-(Ethylamino)ethanol |
| Percent: | >98.0%(GC)(T) |
| CAS RN: | 110-73-6 |
| EC-No: | 203-797-5 |
| Synonyms: | N-Ethylethanolamine |
| Chemical Formula: | C4H11NO |
| | |

SECTION 4: First aid measures 4.1 Description of first aid measures

| .1 Description of first aid measures | |
|--------------------------------------|--|
| Inhalation: | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. |
| Skin contact: | Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician. |
| Eye contact: | Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.Immediately call a POISON CENTER or doctor/physician. |
| Ingestion: | Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Do NOT induce vomiting. |
| Protection of first-aiders: | A rescuer should wear personal protective equipment, such as rubber gloves and air-tight goggles. |

4.2 Most important symptoms and effects, both acute and delayed No data available

4.3 Indication of any immediate medical attention and special treatment needed No data available

| SECTION 5: Firefighting measures | |
|---|--|
| 5.1 Extinguishing media Suitable extinguishing media: | Dry chemical, foam, water in large amounts, carbon dioxide. |
| 5.2 Special hazards arising from the substance or mixture | Take care as it may decompose upon combustion or in high temperatures to generate poisonous fume. Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx) |
| 5.3 Advice for firefighters | Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so. When extinguishing fire, be sure to wear personal protective equipment |
| SECTION 6: Accidental release mea | asures |
| 6.1 Personal precautions, protective equipment and emergency procedures | Use personal protective equipment. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc |
| 6.2 Environmental precautions | Prevent product from entering drains |
| 6.3 Methods and materials for containment and cleaning up | Absorb spilled material in a suitable absorbent (e.g. rag, dry sand, earth, saw-dust). In case of large amount of spillage, contain a spill by bunding. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations. Remove all sources of ignition. Fire-extinguishing devices should be prepared in case of a fire. Use spark-proof tools and explosion-proof equipment. |
| 6.4 Reference to other sections | For disposal see section 13. |
| SECTION 7: Handling and storage | |
| 7.1 Precautions for safe handling | Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent generation of vapour or mist. Keep away from flames and hot surfaces. Take measures to prevent the build up of electrostatic charge. Use explosion-proof equipment. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a ventilation, local exhaust if vapour or aerosol will be generated. Avoid contact with skin, eyes and clothing. |
| 7.2 Conditions for safe storage, including any incompatibilities | Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store under inert gas. Protect from moisture. Store locked up. Store away from incompatible materials such as oxidizing agents. Hygroscopic |
| 7.3 Specific end use(s) | No further relevant information available. |
| | |

| ECTION 8: Exposure controls/personal protection | | | |
|---|--|--|--|
| 8.1 Control parameters | No data available | | |
| 8.2 Exposure controls | Install a closed system or local exhaust. Also install safety shower and eye bath. | | |
| Respiratory protection: | Half or full facepiece respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations. | | |
| Hand protection: | Impervious gloves. | | |
| Eye protection: | Safety goggles. A face-shield, if the situation requires. | | |
| Skin and body protection: | Impervious protective clothing. Protective boots, if the situation requires. | | |

| SECTION 9 | Physical | and chemical | nroperties |
|-----------|----------|--------------|------------|
| | | | |

| 9.1 Information on basic physical and cl | nemical properties |
|--|---|
| Physical state (20°C): | Liquid |
| Form: | Clear |
| Colour: | Colorless - Very pale yellow |
| Odour: | Weakly Amine-like |
| pH: | 12.3 (100g/L H ₂ O 20°C) |
| Melting point/freezing point: | -90°C |
| Boiling point/range: | 169°C |
| Flash point: | 71°C |
| Evaporation rate(Butyl Acetate=1): | No data available |
| Flammability(solid, gas): | No data available |
| Flammability or explosive limits: | |
| Lower: | 1.6% |
| Upper: | 11.7% |
| Vapour pressure: | <0.1kPa/20°C |
| Vapour density: | 3.06 |
| Relative density: | 0.92 |
| Solubility(ies): | |
| [Water] | Soluble |
| [Other solvents] | |
| Soluble: | Methanol, Ether, Acetone, Ethanol, Ethyl acetate, Aromatic hydrocarbons |
| Partition coefficient: | No data available |
| n-octanol/water: | |
| Autoignition temperature: | 330°C |
| Decomposition temperature: | No data available |
| Dynamic Viscosity: | No data available |
| Kinematic viscosity: | No data available |
| 9.2 Other safety information | No data available |
| SECTION 10: Stability and reactivity | / |

| 10.1 Reactivity | No data available |
|---|--|
| 10.2 Chemical stability | Stable under proper conditions. |
| 10.3 Possibility of hazardous reactions | No special reactivity has been reported. |
| 10.4 Conditions to avoid | Open flame |
| 10.5 Incompatible materials | Oxidizing agents, Strong acids |
| | |

10.6 Hazardous decomposition products Carbon dioxide, Carbon monoxide, Nitrogen oxides (NOx)

SECTION 11: Toxicological information

| 11.1 Information on toxicological effects | |
|---|-------------------------|
| Acute Toxicity: | ipr-rat LD50:1170 mg/kg |
| | orl-mam LD50:1200 mg/kg |
| | skn-rbt LD50:360 uL/kg |
| | orl-rat LD50:1 g/kg |
| Skin corrosion/irritation: | No data available |
| Serious eye damage/irritation: | No data available |
| Respiratory or skin sensitization: | No data available |
| Germ cell mutagenicity: | No data available |
| Carcinogenicity: | |
| IARC = | No data available |
| NTP = | No data available |
| Reproductive toxicity: | No data available |
| STOT-single exposure: | No data available |
| STOT-repeated exposure: | No data available |
| Aspiration hazard: | No data available |
| RTECS Number: | KK9100000 |
| | |

| SECTION 12: Ecological informat | ion | | |
|--------------------------------------|-------------------|--|--|
| 12.1 Toxicity | | | |
| Fish: | No data available | | |
| Crustacea: | No data available | | |
| Algae: | No data available | | |
| 12.2 Persistence and degradability | No data available | | |
| 12.3 Bioaccumulative potential | No data available | | |
| 12.4 Mobility in soil | | | |
| Log Pow: | No data available | | |
| Soil adsorption (Koc): | No data available | | |
| Henry's Law (PaM ³ /mol): | No data available | | |
| 12.5 Results of PBT and vPvB assess | ment | | |
| PBT: | Not applicable | | |
| vPvB: | Not applicable | | |
| 12.6 Other adverse effects | No data available | | |

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recycle to process, if possible. Consult your local regional authorities. You may be able to burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

| 14.1 UN number | ion 2922 | |
|---|--------------------------------|--|
| | | |
| 14.2 UN proper shipping name | | |
| ADR/RID | Corrosive liquid, toxic, n.c |).S |
| IMDG/IMO | Corrosive liquid, toxic, n.c |).S |
| ICAO/IATA | Corrosive liquid, toxic, n.c |).S |
| 4.3 Transport hazard class(es) | | |
| ADR/RID | 8: Corrosive | |
| Subsidiary risk: | 6.1: Toxic substance. | |
| IMDG/IMO | 8: Corrosive | |
| Subsidiary risk: | 6.1: Toxic substance. | |
| ICAO/IATA | 8: Corrosive | |
| Subsidiary risk: | 6.1: Toxic substance. | |
| 14.4 Packaging group | | |
| ADR/RID | II | |
| IMDG/IMO | II | |
| ICAO/IATA | II | |
| 4.5 Environmental hazards | | |
| Marine pollutant | - | |
| 4.6 Special precautions for user | No data available | |
| SECTION 15: Regulatory informa | ation | |
| 5.1 Safety, health and environmenta | al regulations/legislation spe | |
| Water Hazard Classes (WGK) : | | Class 1 - Low hazard to waters |
| Substance of Very High Concerr REACH Regulations (EC) No.190 | | Not listed |
| 15.2 Chemical safety assessment | | A chemical safety assessment has not been carried out. |
| | | |
| SECTION 16: Other information | | |
| SECTION 16: Other information Prepared by: | TCI EUROPE N.V. | |

The products are supposed to be used for behind the expected time of use or you have any questions, please feel free to contact us. The stated afterwards. If the products are to be used for behind the expected time of use or you have any questions, please feel free to contact us. The stated cautions are for normal handling only. In case of special handling, sufficient care should be taken, in addition to the safety measures suitable for the situation. All chemical products should be treated with the recognition of "having unknown hazards and toxicity", which differ greatly depending on the conditions and handling when in use and/or the conditions and duration of storage. The products must be handled only by those who are familiar with specialized knowledge and have experience or under the guidance of those specialists throughout use from opening to storage and disposal. Safe usage conditions shall be set up on each user's own responsibility.

End of Safety Data Sheet