Issue date: 10/16/2003
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Safety Data Sheet

1. Chemical product and company identification

Product name	:	2-Aminoethanol

Company information

Name of manufacturer	:	KANTO CHEMICAL CO., INC.
Address	:	2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
Name of section	:	Business Administration Department, Reagent Division
Telephone number	:	+81-3-6214-1090
Facsimile number	:	+81-3-3241-1047
Mail address	:	BC32@kanto.co.jp
Reference No	:	14024
Product numbers applied by the SDS	:	01143, 14024
Recommended use	:	For research use only
Restrictions on use	:	Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Physical hazards	Flammable liquids	Category 4
Health hazards	Acute toxicity (dermal)	Category 4
	Skin corrosion/irritation	Category 1C
	Serious eye damage/eye irritation	Category 1
	Skin sensitization	Category 1
	Specific target organ toxicity (single exposure)	Category 1 (central nervous system, respiratory organs, liver)
	Specific target organ toxicity (single exposure)	Category 3 (narcosis)
	Specific target organ toxicity (repeated exposure)	Category 1 (central nervous system)
	Specific target organ toxicity (repeated exposure)	Category 2 (respiratory organs)
Environmental hazards	Aquatic acute	Category 2

Hazard pictograms



Signal word	:	Danger
Hazard statements	:	Combustible liquid Harmful in contact with skin Causes severe skin burns and eye damage May cause an allergic skin reaction May cause drowsiness or dizziness

Causes damage to organs (central nervous system, respiratory organs, liver)
Causes damage to organs (central nervous system) through prolonged or repeated exposure
May cause damage to organs (respiratory organs) through prolonged or repeated exposure
Toxic to aquatic life

Precautionary statements

Prevention : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe mist/vapors.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Response : IF SWALLOWED: Rinse mouth. Do not induce vomiting.
IF ON SKIN: Wash with plenty of water.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water .
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor.
Immediately call a POISON CENTER or doctor.
Call a POISON CENTER or doctor if you feel unwell.
Get medical advice/attention if you feel unwell.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Storage : Store in a well-ventilated place. Keep container tightly closed.
Store locked up.

Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Synonyms : Ethanolamine, 2-Hydroxyethylamine, Monoethanolamine

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
2-Aminoethanol	≥ 99	C2H7NO	Listed	205-483-3	141-43-5

4. First aid measures

First aid measures

First-aid measures after : Remove the victim to fresh air, and make him blow his nose and

inhalation		gargle. If necessary, get medical treatment.
First-aid measures after skin contact	:	Wash the affected areas under running water, get medical treatment as soon as possible.
First-aid measures after eye contact	:	Wash the affected areas under running water for at least 15 minutes. Get medical treatment.
First-aid measures after ingestion	:	Rinse mouth with water. Give the victim one or two glasses of water or milk. Do not induce vomiting. Get medical treatment as soon as possible.
Personal Protection in First Aid and Measures	:	Rescuers should wear proper protective equipment like rubber gloves, goggles.

Most Important Symptoms/Effects

Symptoms/effects	:	Inhalation causes cough, headache, shortness of breath, throat ache.

5. Fire fighting measures

Suitable extinguishing media	:	Water, dry chemical powder, carbon dioxide, dry sand, alcohol resistant foam
Unsuitable extinguishing media	:	Foam extinguisher
Firefighting instructions	:	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. Fight fire from windward. Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Alcohol-resistant foam extinguisher is effective for a large scale fire.
Personal protection (Emergency response)	:	Wear breathing apparatus.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

General measures	:	Wear proper protective equipment and avoid contact with skin and inhalation of vapor. Conduct operations from upwind and evacuate people downwind. Remove all sources of ignition. Keep away personnel except for authorized ones from spillage area by stretching ropes.

Environmental precautions

Environmental precautions	:	Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

For containment	:	Absorb spill with paper or cloth and flush spillage area with copious amounts of water.
Prevention Measures for Secondary Accidents	:	Remove nearby sources of ignition and prepare extinguishing media.

7. Handling and storage

Handling

Technical measures	:	Wear proper protective equipment to avoid contact with skin or

inhalation of vapor. Pay attention to fire.

Precautions for safe handling : Use with an enclosed system or a local exhaust ventilation. Use in well-ventilated areas.

Storage

Storage conditions : Store the bottle tightly closed in a cool, dark place because the substance is hygroscopic.

Material used in packaging/containers : Glass, fluorine resin, stainless steel.
Do not use polycarbonate.

8. Exposure controls / Personal protection equipment

ACGIH TWA	3 ppm
ACGIH STEL	6 ppm

Appropriate engineering controls : Use with an enclosed system or a local exhaust ventilation.

Protective equipment

Respiratory protection : If necessary, wear chemical cartridge respirator with an organic vapor cartage

Hand protection : Impervious protective gloves

Eye protection : Safety goggles

Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Liquid

Color : Colorless - pale yellow

Odor : Ammonia like

pH : Strong alkalinity

Melting point : 10.53 ° C

Freezing point : No data available

Boiling point : 170.95 ° C

Flash point : 85 ° C (C.C.)

Auto-ignition temperature : 410 ° C

Decomposition temperature : No data available

Flammability : Flammable

Vapor pressure : 53 Pa (20℃)

Relative density : 1.109 (20/4℃)

Density : No data available

Relative gas density : 2.1

Solubility : Water: Miscible. Organic solvents: Freely soluble in ethanol, glycerol.

Partition coefficient n-octanol/water (log Pow) : -1.38

Explosive limits (vol %) : 5.5 - 17 vol %

Viscosity, kinematic : 13.7 mm^2/s (30℃)

Particle characteristics : No data available

10. Stability and reactivity

Reactivity	:	The acid produces an ammonium salt. The aqueous solution absorbs carbon dioxide, hydrogen sulfide and other acid gases. Reduce mercury salts in aqueous solution.
Chemical stability	:	Stable under normal conditions. Hygroscopic.
Possibility of hazardous reactions	:	May react violently when in contact with strong acids.
Conditions to avoid	:	Light, heat, moisture.
Incompatible materials	:	Acids, oxidizing substances.
Hazardous decomposition products	:	Carbon monoxide, nitrogen oxides.

11. Toxicological information

Acute toxicity (oral)	:	No classification rat LD50=3320mg/kg
Acute toxicity (dermal)	:	Harmful in contact with skin rabbit LD50=1018mg/kg
Acute toxicity (inhalation)	:	No classification (gas) Classification not possible (vapor) Classification not possible (dust, mist)
Skin corrosion/irritation	:	Causes severe skin burns In a test in which the undiluted solution was applied to the skin of rabbits for 1 minute or 5 minutes and washed, bleeding and application time-dependent redness and necrosis were observed in the skin 1 day after application, and from 8 days after application, formation of desquamation was observed. Moreover, there is a report that redness and edema were observed in a 1.5-hour semi-occlusive dermal application test in human volunteers. From the above results, it was classified into category 1A.
Serious eye damage/irritation	:	Causes serious eye damage In an eye irritation test with rabbits, severe chemical burns, corneal opacity and severe edema were observed from the nictating membrane to the conjunctiva and lid margin after administration of the undiluted solution and these did not disappear at 8 days. From the above results, it was classified into category 1.
Respiratory sensitization	:	Classification not possible
Skin sensitization	:	May cause an allergic skin reaction There is a report that in a skin sensitization test with guinea pigs, moderate sensitization was observed In addition, in epidemiological information, a strong positive result was observed in a patch test on a lathe operator using water-soluble oil containing this substance. From the above results, it was classified into category 1.
Germ cell mutagenicity	:	No classification As for in vivo, it was negative in a micronucleus test with mice. As for in vitro, it was negative in bacterial reverse mutation tests and chromosomal aberration tests and a sister chromatid exchange test with cultured mammalian cells.
Carcinogenicity	:	Classification not possible

Reproductive toxicity	:	Classification not possible No abnormalities were observed in fetuses and neonates even at a dose where maternal toxicity was observed in a teratogenicity test with rats by the oral route. As in the above, although no teratogenicity was observed, no information on fertility was available, therefore, it was classified as "Classification not possible."
STOT-single exposure	:	Causes damage to organs (central nervous system, respiratory organs, liver) May cause drowsiness or dizziness In humans, there are reports of cough, headache, shortness of breath, sore throat, vomiting, weakness, dizziness, numbness of the upper extremities and chest pains by inhalation exposure, and of inflammation of the upper respiratory organ, chronic bronchitis, acute liver damage and subsequent chronic hepatitis by inhalation exposure to 1 mg/m3 or above. In addition, by oral ingestion, it caused abdominal pain, burning sensation, shock/prostration, effects on the central nervous system, and lowering of consciousness. As for experimental animals, there are reports of apathy, reduced mobility, staggering gait, tonic-clonic spasms, dyspnea, abdominal position, paralysis of motor nerves, hypertension, sedation, muscle tremors and delayed death by the oral route, and there is a report of necrosis in the liver parenchyma at autopsy. From the above, although symptoms were observed within the guidance value corresponding to category 2 or 3 in experimental animals, with an emphasis on effects on humans, it was classified into category 1 (central nervous system, respiratory organs, liver), category 3 (narcosis).
STOT-repeated exposure	:	Causes damage to organs (central nervous system) through prolonged or repeated exposure May cause damage to organs (respiratory organs) through prolonged or repeated exposure As for experimental animals, since both in a 13-week test with rats dosed by feeding, and in 13-week and 104-week tests with rats and mice dosed by drinking water, at doses far exceeding category 2, mainly, effects on the kidneys were observed, it was considered equivalent to "Not classified" by the oral route. By the inhalation route, in tests in which, varying concentrations and duration of exposure, rats, guinea pigs and dogs were exposed to the vapour of this substance by inhalation for 24 hours/day, in rats and dogs, a decrease in activity by exposure to 12-15 mg/m3 for 40 days or 60 days, and lethargy by exposure with rats, guinea pigs and dogs at 29-64 mg/m3 for 90 days were observed. Therefore, effects on the central nervous system were observed within the range of category 1. Besides, as described in the hazard class of specific target organ toxicity (single exposure), since this substance was a respiratory irritant, category 2 (respiratory organs) was added in addition to category 1 (central nervous system) also as a target organ for repeated exposure.
Aspiration hazard	:	Classification not possible

12. Ecological information

Ecotoxicity

Aquatic acute	:	Toxic to aquatic life Pseudokirchneriella subcapitata ErC50=2.5mg/L/72h
Aquatic chronic	:	No classification

Persistence and degradability

Readily biodegradable
BOD : 83%

Bioaccumulative potential

Low bioconcentration
BCF : 3.2

Mobility in soil

High mobility
Koc : 1

Hazardous to the ozone layer

Ozone	:	Classification not possible

13. Disposal considerations

Ecological waste information	:	Mixed with flammable organic solvents and burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.
Contaminated container and packaging	:	In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG)	:	2491
Proper Shipping Name (IMDG)	:	ETHANOLAMINE
Packing group (IMDG)	:	III
Transport hazard class(es) (IMDG)	:	8

Air transport(IATA)

UN-No. (IATA)	:	2491
Proper Shipping Name (IATA)	:	Ethanolamine
Packing group (IATA)	:	III
Transport hazard class(es) (IATA)	:	8

Marine pollutant	:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollutant category	:	Y
MFAG-No	:	153

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources	:	Solvents Handbook, T, Asahara el, Kodansha Scientific Ltd. (1976) . Encyclopaedia Chimica, Kyoritsu Shuppan Co, Ltd. (1963) . Handbook of Dangerous Substances Springer-Verlag Tokyo (1991) . Handbook of 17322 Chemical Products, The Chemical Daily Co.

(2022) .
NITE Chemical Risk Information Platform (NITE-CHRIP), National Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully.The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements.The information herein is only provision of information, and it does not represent a guarantee the properties of the product.The Safety Data Sheet(SDS) is prepared based on JIS Z7253.