NIPPON NYUKAZAI CO., LTD.

SAFETY DATA SHEET

SDS: A6131-0000_E001
Date Prepared: 2018/06/12
Date Revised: 2023/01/10

Product Name: **AMINO ALCOHOL EA**

1. Identification of the substance/mixture and of the company/undertaking

Product name:	AMINO ALCOHOL EA
Identification of the supplier:	Nippon Nyukazai Co., Ltd.
Address:	No.4-1.Nihonbashi Kobuna-cho, Chuo-ku, Tokyo 103-0024, Japan
Charge section:	Business Operation Department (TEL:+81-3-5651-5640,FAX:+81-3-5651-5646)
Emergency telephone number:	Business Operation Department (TEL:+81-3-5651-5640,FAX:+81-3-5651-5646)
Recommend use:	Neutralizer , intermediate raw materials
Restrictions on use:	Seek expert judgment when using for purposes other than those recommended.

2. Hazards identification

Hazard category

Skin corrosion/irritation	Category 1B
Serious eye damage/eye irritation	Category 1
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Toxic to reproduction	Category 1B
Specific target organ systemic toxicity following repeated exposure	Category 2
Acute hazards to the aquatic environment	Category 3
Chronic hazards to the aquatic environment	Category 3

Label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:

H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (kidney) through prolonged or repeated exposure.
H402 Harmful to aquatic life
H412 Harmful to aquatic life with long lasting effects.

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Precautionary statements:

Prevention
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash hands and face thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.

Response
P310 Immediately call a POISON CENTER/doctor/healthcare professionals under the supervision of a doctor.
P314 Get medical advice/attention if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.
P363 Wash contaminated clothing before reuse.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of water/or shower.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P333+P313 If skin irritation or a rash occurs: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/healthcare professionals under the supervision of a doctor.

Storage
P405 Store locked up.

Disposal
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

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3. Composition/information on ingredients

3.1. Substances

Ingredients and Concentration

Ingredient Name	Concentration wt.%	CAS RN®	Existing and New Chemical Substances (JAPAN)	Industrial Safety and Health Law Substances (JAPAN)	Industrial Safety and Health Law (JAPAN)	Pollutant Release Transfer Register Law (JAPAN)	Poisonous and Deleterious Substances Control Act (JAPAN)
			Gazette notice reference number	Gazette notice reference number	Notifiable Substances	Specified Substances	Poisonous and Deleterious Substances
N-(2-Hydroxyethyl)ethylenediamine	99-100	111-41-1	2-304	Public	Not applicable	Not applicable	Deleterious Substances

3.2. Mixtures Not Applicable

4. First aid measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If breathing is stopped, lie on your back and perform cardiopulmonary respiration.
Get medical advice/attention.

Skin contact: Take off contaminated clothing and wash before reuse.
Wash with plenty of soap and water.
If skin irritation or a rash occurs: Get medical advice/attention.

Eye contact: Immediately flush eye with plenty of clean water for at least 15 minutes. (If easy to do, remove contact lenses, if worn.) Get medical attention immediately.

Ingestion: After having swallowed it, Drink a large quantity of water when consciousness becomes clear and receive treatment for the doctor immediately.
A mouth must not give a person without the consciousness a thing.

Protection for first aid person: The rescuer wears a tool for appropriate protection depending on the situation.

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5. Firefighting measures

Suitable extinguishing media:	Use water spray(fog), foam, dry chemical or CO2.
Extinguishing media to avoid:	Straight stream water.
Specific hazards arising from the chemical:	At the time of fire, hazardous gases (carbon monoxide,NOx and others) can be generated.
Fire fighting:	Keep upwind of fire. Eliminate all ignition sources if safe to do so. In case of fire in the surroundings, move the content/container to the safety place. If it is not possible to move, cool the content/container with water spray.
Special protective equipment and precautions for fire fighters:	Gloves, protection glasses, wear fire,flame resistant,retardant clothing, air respiratory organs wear a tool for appropriate protection.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Promptly remove possible ignition sources from the vicinity. Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.
Environmental precautions:	To environment (area of the sea, the soil) must not release it.
Methods and materials for containment and cleaning up:	Absorb this product with inactive materials (example: dry sand, earth) and recover it into a waste material container. In the case of large amount, stop leakage with earth/sand to begin with, and, then, recover it. In the case of a small quantity, I adsorb it in the earth and sand, a waste and collect it in empty container which I can seal up after having removed it.

7. Handling and storage

Handling

Technical measures:	During handling, be sure to wear proper protective equipment (refer to the section 8). This product can be charged with static electricity. Take countermeasures for static electricity removal (grounding, others). Wear antistatic clothes and antistatic shoes to prevent human body electrification. Use explosion-proof electrical/ventilating/lighting equipment.
Ventilation requirements:	Use the ventilation equipment described in Section 8.
Precautions for safe handling:	Not especially.

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Storage

Storage conditions:	Store the containers avoiding direct sunlight. Store in less than 40℃ in a well-ventilated room.
Safety adequate container materials:	Use the container specified by the Fire Service ACT and the United Nations Transport Regulations.

8. Exposure controls/personal protection

Appropriate engineering controls: Use local ventilation equipment.
Install eye and body washing facilities near the handling place.
Display the position of equipment clearly.

Control parameters

Ingredient Name	Industrial Safety and Health Law (JAPAN)	Japan Society for Occupational Health	ACGIH-TLV	
	Administrative Control Levels	Occupational Exposure Limits	TWA	STEL
N-(2-Hydroxyethyl)ethylenediamine	Not established	Not established	Not established	Not established

Personal protective equipment

Respiratory protection:	Use a gas mask for organic gases, air-supplied respirator, self - contained compressed air breathing apparatus on the situation.
Hand protection:	Organic solvent impermeable protective gloves (Antistatic ones are desirable.)
Eye/face protection:	Protective glasses, goggle, protective face shield.
Skin/body protection:	Wear long-sleeved working clothes and protective shoes.(Antistatic ones are desirable.) Use an oiliness apron-resistant, boots depending on the situation.
Hygiene measures:	Wash with soap and water after handling.

9. Physical and chemical properties

Product

Form:	Liquid（20℃）
Color:	Colorless transparent
Odor:	Ammonia odor
Melting point/freezing point:	-38(℃)

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Initial boiling point and boiling range:	243.7(℃)
Flammability (solid, gas):	No data
Upper/lower flammability or explosive limits:	No data
Flash point:	151(℃)
Auto-ignition temperature:	368.3(℃)
Decomposition temperature:	No data
pH:	≧11.5
Kinematic viscosity:	No data
Solubility:	water : Soluble.
Partition coefficient: n-octanol/water:	No data
Vapour pressure:	1.3(Pa)(20℃)
Specific Gravity:	1.031(20℃)
Vapour density:	No data
Particle characteristics:	No data

10. Stability and reactivity

Chemical stability:	Stable under normal temperatures and pressures.
Possibility of hazardous reactions:	It may react with the oxidizing agent and generate heat.
Conditions to avoid:	Avoid heat, flames, sparks and ignition sources.
Incompatible materials:	Acid, Oxidizing agents.
Hazardous decomposition products:	No data available

11. Toxicological information

Product

Acute toxicity (oral):	No Classification
Acute toxicity (dermal):	No Classification
Acute toxicity (inhalation):	Classification not possible (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 1B
Serious eye damage/irritation:	Category 1
Respiratory sensitization:	Category 1
Skin sensitization:	Category 1
Mutagenicity:	No Classification

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Product Name: AMINO ALCOHOL EA

Carcinogenicity:	Classification not possible
Reproductive toxicity:	Category 1B
Target organ effect/Single exposure:	Classification not possible
Target organ effect/Multi exposure:	Category 2(kidney)
Respiratory toxic:	Classification not possible

Ingredient
N-(2-Hydroxyethyl)ethylenediamine

Acute toxicity (oral):	No Classification LD50: 2000-5315 mg/kg[rat]
Acute toxicity (dermal):	No Classification LD50:> 2000 mg/kg[rat], LD50:> 2000 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist) Effect on animals : No data
Skin corrosion/irritation:	Category 1B Corrosive [rabbit] Effect on animals : In a test in which 0.5 mL of the undiluted solution of this substance was applied to the skin of rabbits in a semi-obstructed manner, necrosis occurred in 2 of 2 cases after application for 4 hours and in 1 of 4 cases after application for 1 hour. Necrosis across all layers was confirmed (SIDS (2008)). In another test in which 0.5 mL of the undiluted solution of this substance was occluded and applied to the skin of rabbits, full-thickness necrosis was observed on the skin after application for 4 hours or 1 hour, and it was evaluated as corrosive (SIDS (2008)). However, only slight irritation was observed after application for 3 minutes, and it was classified as Category 1B.

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Serious eye damage/irritation:	Category 1 Corrosive [rabbit] Effect on animals : In a test in which 0.05 mL of the test substance stock solution was applied to the conjunctival sac of rabbits, moderate to severe conjunctival redness, edema, and moderate corneal opacity occurred within 1 hour of application, and until the 8th day of the end of the observation period. Persistent and corneal opacity is considered irreversible and has been reported to be corrosive (SIDS (2008)). In another test in which 0.1 mL of the test substance stock solution was applied to the conjunctival sac of rabbits, very strong redness and edema were observed 1 to 2 days after application, and extremely severe corneal necrosis was observed 14 days after application, which was corrosive. (Corrosive) is reported (SIDS (2008)). Based on the above report, it was classified as Category 1.
Respiratory sensitization:	Category 1 Effect on person : Two patients who used a melt containing this substance as an aluminum cable joining worker developed severe bronchoconstriction after 3 hours due to inhalation of the melt or vapor of this substance in a respiratory function test and lasted for several days. Therefore, it has been concluded that this substance is the causative agent of asthma that occurred after vapor inhalation of the melt (SIDS (2008)). In another report, three patients who were aluminum cable joining workers developed severe delayed allergic asthma after inhalation of the flux or vapor of the substance and were considered asthma by respiratory function testing (SIDS (2008)). Based on the above two reports, it was classified as Category 1.
Skin sensitization:	Category 1 Effect on animals : There is a positive report with a positive rate of 40% (8/20) in a Guinea Pig Maximisation test, and a positive result was obtained when the SI value was 3 or more in the local lymph node proliferation test (LLNA) of mice (SIDS (2008)) . Furthermore, this substance is listed in Contact Dermatitis (5th, 2011) as an allergic substance. Based on the above report, it was classified as Category 1.

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Mutagenicity:	No Classification Micronucleus test using bone marrow cells after oral administration to mice (OECD TG474, GLP), negative (Ministry of Health, Labor and Welfare report (Access on Aug. 2012)) It was out of classification from the above.
Carcinogenicity:	Classification not possible No data
Reproductive toxicity:	Category 1B In a reproductive and developmental toxicity screening study (OECD TG421, GLP) using rats, fertility decreased at 1000 mg / kg / day, post-implantation embryo loss rate was 100%, pregnancy rate was 0%. No maternal animals were found to have delivered. In addition, at 250 mg / kg / day, stillbirths increased and offspring survival decreased, and at 50 and 250 mg / kg / day, abnormalities affecting pericardial blood vessels such as aneurysms and vasodilation occurred frequently (SIDS (2008)). This pericardial vascular toxicity finding was confirmed by a reproductive and developmental toxicity screening study (OECD TG421, GLP) in rats, which was re-executed with a partial modification of the test method. Occurrence was seen at 0.2-50 mg / kg / day, and increased incidence of vascular lesions was apparent at 50 mg / kg / day (SIDS (2008)). Based on the above report, it was classified as Category 1B.
Target organ effect/Single exposure:	Classification not possible Transdermal administration of 2000 mg / kg to rats or rabbits resulted in no deaths and no signs of systemic toxicity in either species (SIDS (2008)). On the other hand, oral administration to rats caused symptoms such as dyspnea, dullness, sluggishness, ataxia, and prone position at doses exceeding the guidance value range (SIDS (2008)). Since there is no appropriate data for the classification of inhaled exposure, it was classified as "Classification not possible" as a classification of Target organ effect/Single exposure.

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Target organ effect/Multi exposure:	Category 2(kidney) In a 28-day repeated oral administration test (Guidelines for Chemical Substances Control, GLP) of rats, an increase in urinary protein and an increase in urine specific gravity were observed in the administration group of 250 mg / kg (90-day equivalent: 77 mg / kg / day) . In addition, the urine volume decreased and the renal weight increased in the 1000 mg / kg (90-day equivalent: 308 mg / kg / day) administration group. Histopathological examination revealed swelling and epichromic body formation in the proximal tubule at the border of the epithelium in the kidney and mucosal thickening in the stomach in the 250 mg / kg or higher administration group. (Report of the Ministry of Health, Labor and Welfare (Access on Aug. 2012)). From the above results, since the effect on the kidney was shown at a dose of 250 mg / kg (90-day conversion: 77 mg / kg / day) or more, which corresponds to the guidance value category 2, it was classified as category 2 (kidney).
Respiratory toxic:	Classification not possible Effect on person : No data

12. Ecological information

Product

Ecotoxicity	
Acute toxicity:	Category 3
Chronic toxicity:	Category 3
Persistence and degradability :	No information.
Bioaccumulative potential :	No information.
Mobility in soil:	No information.
Hazardous to the ozone layer:	Classification not possible
Other impact :	No information.

Ingredient
N-(2-Hydroxyethyl)ethylenediamine

Ecotoxicity	
Acute toxicity:	Category 3
Fish:	No data
Daphnia:	48hrEC50: 22 mg/L[Daphnia magna]
Algae:	No data
Chronic toxicity:	Category 3
Fish:	No data
Daphnia:	No data
Algae:	No data

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Persistence and degradability :	Not rapidly biodegradable
Bioaccumulative potential :	Low bioconcentration
Hazardous to the ozone layer:	Classification not possible

13. Disposal considerations

Disposal methods: When waste materials and waste water are to be treated, collect them into specified containers and entrust the disposal to a disposal contractor having an industrial waste disposal contractor permit.
Do not use the used containers for other purposes like filling other substances. Be sure to dispose of them after treating the content according to the above description. In case of recycling the container, return the container as it is after fitting a stopper without filling anything into it.

14. Transport information

International regulations	UN classification :	8
	UN number :	2735
	Proper shipping name :	AMINES, LIQUID, CORROSIVE, N.O.S.
	Packing group :	Ⅱ
Domestic restriction:		Transport the material in accordance with the regulations in your country or region.
Specific security precaution and condition of transportation:		Load the containers in such a way as not to wet with water,fall down, tumble, or being damaged. Cover the loaded cargo to prevent direct sunlight.
Emergency Response Guide (ERG) Numbers:		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

Reference: Information obtained in NITE (National Institute of Technology and Evaluation) and other literature surveys.

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Disclaimer	About the description: This SDS was created in accordance with JIS Z 7253 based on the materials and data available at the time of creation. Detailed information such as composition and ingredients corresponding to overseas legal regulation registration confirmation etc. may not be described, so please contact our sales staff separately if necessary. Precautions are for normal handling. In case of special handling, it is the responsibility of the user to take safety measures suitable for the intended use and usage. We have paid close attention to the contents, but we do not guarantee the contents. This product can only be used for industrial purposes. If you want to use it for other purposes, please contact us in advance.