NIPPON NYUKAZAI CO., LTD.

SAFETY DATA SHEET

SDS: A3701-0300_E001
Date Prepared: 2019/08/20
Date Revised: 2023/01/10

Product Name: **ANTOX MS-2N-D**

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

Product name:	ANTOX MS-2N-D
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:	Emulsion polymerization agent
Restrictions on use:	Seek expert judgment when using for purposes other than those recommended.
Recommend use / Restrictions on use :	For emulsion polymerization

2. Hazards identification

Hazard category

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Specific target organ systemic toxicity following single exposure	Category 2
Specific target organ systemic toxicity following repeated exposure	Category 2

Label elements

Hazard pictograms:

Signal word: Warning

Hazard statements:
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H371 May cause damage to organs (respiratory apparatus).
H373 May cause damage to organs (respiratory apparatus) through prolonged or repeated exposure.

Precautionary statements:

Prevention
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash hands and face thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response
P314 Get medical advice/attention if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before reuse.

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P302+P352 IF ON SKIN: Wash with plenty of water/or shower.
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+P311 IF exposed or concerned: Call a POISON CENTER/doctor/healthcare professionals under the supervision of a doctor.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

Storage P405 Store locked up.

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

3. Composition/information on ingredients

3.1. Substances

Not Applicable

3.2. Mixtures

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
2-sulfoethyl methacrylate, sodium salt	87.5	1804-87-1	2-1613, 2-2829	Public	Not applicable	Not applicable	Not applicable
2-Hydroxyethanesulfonic acid sodium salt	11.5	1562-00-1	2-1646	Public	Not applicable	Not applicable	Not applicable
Methacrylic acid	1.0	79-41-4	2-1025	Public	Applicable	Applicable	Less than regulation
(xylenes)	(0-0.29)	1330-20-7	3-3, 3-60	Public	Applicable	Less than regulation	Less than regulation

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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.

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 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.

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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).
	Ventilation requirements:	Use the ventilation equipment described in Section 8.
	Precautions for safe handling:	Not especially.
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.

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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
2-sulfoethyl methacrylate, sodium salt	Not established	Not established	Not established	Not established
2-Hydroxyethanesulfonic acid sodium salt	Not established	Not established	Not established	Not established
Methacrylic acid	Not established	2ppm 7.0mg/m3	20ppm -mg/m3	Not established
xylenes	50ppm -mg/m3	50ppm 217mg/m3	100ppm -mg/m3	150ppm -mg/m3

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: Powder
Color: White～Light yellow
Odor: No data
Melting point/freezing point: No data
Initial boiling point and boiling range: No data
Flammability (solid, gas): No data

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Upper/lower flammability or explosive limits:	No data
Flash point:	No detection
Auto-ignition temperature:	No data
Decomposition temperature:	No data
pH:	No data
Kinematic viscosity:	No data
Solubility:	water : Soluble. organic solvents : Insoluble.
Partition coefficient: n-octanol/water:	No data
Vapour pressure:	No data
Specific Gravity:	Bulk specific gravity0.7(25℃)
Vapour density:	No data
Particle characteristics:	No data

10. Stability and reactivity

Chemical stability:	Stable under normal temperatures and pressures.
Possibility of hazardous reactions:	No data available
Conditions to avoid:	No data available
Incompatible materials:	No data available
Hazardous decomposition products:	No data available

11. Toxicological information

Product

Acute toxicity (oral):	Classification not possible
Acute toxicity (dermal):	Classification not possible
Acute toxicity (inhalation):	Classification not possible (Gas) Classification not possible (Vapour) Classification not possible (Dust/Mist)
Skin corrosion/irritation:	Category 2
Serious eye damage/irritation:	Category 2
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Classification not possible
Reproductive toxicity:	Classification not possible

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Target organ effect/Single exposure:	Category 2(respiratory apparatus)
Target organ effect/Multi exposure:	Category 2(respiratory apparatus)
Respiratory toxic:	Classification not possible

Ingredient

2-sulfoethyl methacrylate, sodium salt

No Data

2-Hydroxyethanesulfonic acid sodium salt

No Data

Methacrylic acid

Acute toxicity (oral):	No Classification LD50: 1320-2260 mg/kg[rat]
Acute toxicity (dermal):	Category 3 LD50: 500-1000 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Classification not possible (Vapour) No Classification (Dust/Mist) LC50: 7.1 mg/L[rat]
Skin corrosion/irritation:	Category 1A Effect on animals : There is a report that in a skin irritation test with rabbits (compliant with Confirmation test in the US Department of Transportation Packing Group classification), corrosivity was observed on observation immediately after a test in which undiluted liquid of this substance was openly applied for 3 minutes, followed by wiping away with a water-impregnated paper towel (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)). Therefore, this substance was classified in Category 1A based on the criteria of sub-categories. Besides, this substance is classified as "Skin Corr. 1A" in EU CLP classification (ECHA CL Inventory (Access on June 2017)).

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Serious eye damage/irritation:	Category 1 Effect on animals : This substance was classified in Category 1A for Skin corrosion/irritation. There is a report that in an eye irritation test (according to OECD TG 405) with rabbits in which 0.1 mL of this substance was applied, at 24 hours after the application, corneal opacity, iridial irritation, redness of the conjunctiva, and conjunctival edema were observed in all the rabbits, corneal opacity, iridial irritation, conjunctival irritation did not resolve even on the seventh day, and chemical burns, necrosis and sloughing of the corneal epithelium, and empyema of the anterior chamber were observed (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)). Based on these pieces of information, this substance was classified in Category 1.
Respiratory sensitization:	Classification not possible Effect on person : Classification not possible due to lack of data.
Skin sensitization:	No Classification Effect on person : In human cases, in patients allergic to related substances of this substance, patch tests with 0.1% of this substance were negative (Environmental Risk Assessment for Chemical Substances Vol. 12 (Ministry of the Environment, 2014), DFGOT Vol. 26 (2010)). Effect on animals : No sensitization was observed in any sensitization tests by the Buhler method or Polak adjuvant method with guinea pigs (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)). Therefore, this substance was classified as "Not classified."

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Mutagenicity:	Classification not possible There is no in vivo data for this substance. However, since methyl methacrylate (CAS RN 80-62-6), the methyl ester of this substance, is hydrolyzed to produce this substance, in vivo data of methyl methacrylate can be used as in vivo data for this substance (EU-RAR (2002), Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)). Therefore, as for in vivo data for the classification of this substance, data on methyl methacrylate were used. Methyl methacrylate was negative in a mouse dominant lethal test, negative in a micronucleus test with mouse bone marrow cells, positive and negative results in the chromosome aberration tests with rat bone marrow cells (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005), ACGIH (7th, 2001), DFGOT Vol. 26 (2010), EU-RAR (2002), SIDS (2002), OEL Documentations (Japan Society For Occupational Health (JSOH), 2012), CICAD 4 (1998), Environmental Risk Assessment for Chemical Substances Vol.11 (Ministry of the Environment, 2013), IRIS Tox. Review (1998)). However, the positive result of in vivo chromosomal aberration tests was evaluated as poor reliability (EU-RAR (2002), SIDS (2002)). As for in vitro, a bacterial reverse mutation test was negative (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005), EU-RAR (2002), SIDS (2002), DFGOT Vol. 26 (2010)). From the above, this substance was classified as "Classification not possible" according to the GHS Classification Guidance for the Japanese Government.
Carcinogenicity:	Classification not possible There is no information related to the carcinogenicity of the substance itself, therefore, classification was not possible due to lack of data.

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Reproductive toxicity:	Classification not possible In a developmental toxicity study with pregnant rats exposed by inhalation to this substance on Gestational Day 6-20, developmental effects were not observed in fetuses at up to 300 ppm where a reduction in body weight gain was observed in maternal animals (Environmental Risk Assessment for Chemical Substances Vol.12 (Ministry of the Environment, 2014), OEL Documentations (Japan Society For Occupational Health (JSOH), 2012)). However, there is no information on fertility and sexual function, therefore, classification was not possible due to lack of data. Besides, there is a description that an increase in the incidence of malformations was observed in an in vitro embryo culture test (Environmental Risk Assessment for Chemical Substances Vol.12 (Ministry of the Environment, 2014), OEL Documentations (Japan Society For Occupational Health (JSOH), 2012)).
Target organ effect/Single exposure:	Category 1(respiratory apparatus) In humans, one case of a child who ingested 3 to 5 mL of a product containing 98% of this substance by mistake is reported. According to this, corrosion of the esophagus and stomach was observed in an endoscopic examination of the gastrointestinal tract. In addition, discoloration and marked edema of the supraglottic area in the nasopharyngoscopy and bronchoscopy, erythema and copious secretions in the trachea and bronchus and narrowing of the bronchus were observed. It is described that the patient developed pneumonia after admission and suffered wheezing and dyspnea (Environmental Risk Assessment for Chemical Substances Vol.12 (Ministry of the Environment, 2014)). As for experimental animals, there is a report that in a 4-hour single inhalation exposure test with rats, respiratory tract irritation was observed at the autopsy. Although there is no detailed description of the dose at which the effect was observed, it is considered to be greater than Category 2 near the LC50 value of 7.1 mg/L (EU-RAR (2002)). Moreover, it is reported that in a one-hour single exposure test with rats, although there was no case of death, nasal discharge containing blood was observed, and as a result of necropsy, mild diffuse or patchy discoloration of the lungs was observed (EU-RAR (2002)). The dose in this test corresponds to Category 1. The information on humans was not adopted as the rationale for classification because it was only one case. However, since effects on the lung in experimental animals were observed at the dose corresponding to Category 1, the substance was classified in Category 1 (respiratory organs).

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Target organ effect/Multi exposure:	Category 1(respiratory apparatus) No information on humans is available. As for experimental animals, there is a report that in a 90-day repeated inhalation toxicity test with rats, inflammatory change of nasoturbinate was observed at or more than 20 ppm (0.0704 mg/L), which is within a guidance value range of Category 1 (Environmental Risk Assessment for Chemical Substances Vol.12 (Ministry of the Environment, 2014), Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)). From the above, this substance was classified in Category 1 (respiratory organs).
Respiratory toxic:	Category 1 Effect on person : A case of a child accidentally ingesting 3 to 5 mL of a product containing 98% of this substance described in the hazard class of specific target organ toxicity (single exposure) was confirmed in the original report. As the result, he was hospitalized immediately after onset, and no abnormality was seen in the lungs on admission, but inflammatory changes were observed from the upper airway to the lower airway using nasopharyngoscopy and bronchoscopy as well as gastrointestinal disorders (please refer to the hazard class of specific target organ toxicity (single exposure)). Also, it is described that it progressed to bilateral pneumonia the day after admission to the hospital (Linden, C.H. et al.: Pediatrics, 102, 979-984 (1998)). From the above, guessing from the symptoms and passage of time, it was considered that it was aspiration pneumonia caused by swallowing this substance. In addition, the calculated kinematic viscosity is also as low as 1.36 mm2/sec (24 deg C) (viscosity: 1.38 mPa*s (24 deg C), density (specific gravity): 1.0153) (Calculated based on HSDB (Access on June 2017)). Therefore, this substance was classified in Category 1.

xylenes

Acute toxicity (oral):	No Classification LD50: 3500-8800 mg/kg[rat]
Acute toxicity (dermal):	Category 4 LD50: 1700-4300 mg/kg[rabbit]
Acute toxicity (inhalation):	Exempt classification (Gas) Category 4 (Vapour) LC50: 6350-6700 ppm[rat] Classification not possible (Dust/Mist)

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Skin corrosion/irritation:	Category 2 Severe [rabbit] Effect on animals : There is a report that after application of this substance to the skin of rabbits (application time is unknown), erythema, edema and necrosis were observed (Hazard Assessment Report (CERI, NITE, 2008)). In addition, there was a report that after application of this substance to rabbits, mice and guinea pigs (application time is not known), slight to strong irritation was observed (ATSDR (2007)). However, there were no descriptions of recovery from either. From the above, this substance was classified in Category 2.
Serious eye damage/irritation:	Category 2 Moderate [rabbit] Effect on animals : There are reports that after application of 0.05 to 0.5 mL of the undiluted liquid of this substance to rabbit eyes, discomfort caused by slight conjunctival irritation and very slight corneal necrosis, and blepharoclonus were observed (Hazard Assessment Report (CERI, NITE, 2008), EHC 190 (1997)), and that after application of 0.1 mL (87 mg) of this substance, mild to moderate irritation was observed (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007)). In addition, there are multiple reports of eye irritation tests with rabbits in which mild to moderate irritations were observed (Hazard Assessment Report (CERI, NITE, 2008), EHC 190 (1997)). From the above, this substance was classified in Category 2.
Respiratory sensitization:	Classification not possible Effect on person : Classification not possible due to lack of data.
Skin sensitization:	Classification not possible Effect on person : Classification not possible due to lack of data.

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Mutagenicity:	Classification not possible The substance was classified as "Classification not possible" because it was not possible to classify a substance as "Not classified" according to the revised GHS classification guidance for the Japanese government. As for in vivo, it was negative in dominant lethal tests with rats and mice, a mouse bone marrow micronucleus test, chromosomal aberration tests with bone marrow cells of rats and mice, a sister chromatid exchange test with peripheral blood of human volunteers (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007), ECETOC JACC 006 (1986), EHC 190 (1997), IARC 71 (1989), ACGIH (7th, 2001), DFGOT vol.15 (2001)). As for in vitro, it was negative in bacterial reverse mutation tests and negative in mouse lymphoma tests with cultured mammalian cells except for one positive test and negative in chromosomal aberration tests with human peripheral blood and cultured mammalian cells (Hazard Assessment Report (CERI, NITE, 2008), ACGIH (7th, 2001), ATSDR (2007), EHC 190 (1997), IARC 71 (1989), ECETOC JACC 006 (1986), NTP TR327 (1986), CEPA (1993)).
Carcinogenicity:	Classification not possible IARC:3, ACGIH:A4, EPA:Data are inadequate for an assessment of human carcinogenic potential

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Reproductive toxicity:	Category 1B Information on xylene for industrial use (the isomer mixture containing ethylbenzene) was obtained. There is a report that in a teratogenicity test of the isomer mixture by the inhalation route with rats, slight effects on fetuses (decreased body weight of fetuses) were observed at doses where no maternal toxicities were observed (ATSDR, 2007). Besides, although no descriptions regarding maternal toxicities were available or there were criticisms against test conditions, there are reports that in a teratogenicity test of the isomer mixture by the inhalation route with rats, an increased fetal resorption was observed at a dose where no maternal toxicity was observed (ATSDR (2007)), and that in another teratogenicity test of the isomer mixture by the inhalation route with rats, an increased fetal resorption in fetuses, microphthalmia and hydrocephalus were observed where maternal toxicities were unknown (Hazard Assessment Report (CERI, NITE, 2008), EHC 190 (1997), ATSDR (2007)). Furthermore, industrial xylene normally contains ethylbenzene and as for reproductive toxicity studies of ethylbenzene, there are reports that in a teratogenicity test with mice by the inhalation route, an increased incidence of malformations in the urinary system (no concrete description of the malformations) at a dose where no maternal toxicities were observed, that in a teratogenicity test with rats by the inhalation route although maternal toxicities were unknown, an increased incidence of malformations in the urinary system (no concrete description of the malformations), and that in a teratogenicity test with rabbits by the inhalation route, absorption (3 out of 3 animals) was observed at a dose where weak maternal toxicity (decreased body weight gain) was observed (ATSDR, (2010), Initial Risk Assessment Report (NITE, CERI, NEDO, 2007), SIDS (2005), Environmental Risk Assessment for Chemical Substances Vol.1 (Ministry of the Environment, 2002)). From the above, this substance was classified in Category 1B.

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Target organ effect/Single exposure: Category 1(central nerve system,respiratory apparatus,liver,kidney)
Category 3(anesthetic action)
In humans, there were multiple reports of accidental cases and occupational exposure cases by the inhalation and oral routes. As for inhalation exposure cases, there is a report that irritation to the respiratory tract, headache, nausea, vomiting, dizziness, coma, narcotic effects, coordination ataxia, disorders of the central nervous system, decreased reaction, fatigue, agitation, confusion and tremors were observed, and death cases showed dyspnea, clouding of consciousness, memory disorders, severe damage of the respiratory organs (pulmonary congestion, alveolar hemorrhage and pulmonary edema), liver damage (congestion associated with enlarged liver and vacuolation of centrilobular hepatocytes), renal impairment, damage of the neuronal cells in the brain, and survivors showed symptoms such as cyanosis of extremities, liver damage, severe renal impairment and amnesia. By oral exposure, there are reports on coma, acute pulmonary edema, liver damage, hematemesis, pulmonary congestion and edema and death from centrally mediated respiratory depression (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007), Environmental Risk Assessment for Chemical Substances Vol.1 (Ministry of the Environment, 2002), ACGIH (7th, 2001), EHC 190 (1997), DFGOT vol.15 (2001) and ECETOC JACC (1986)).
In experimental animals, there were reports of coordination ataxia by inhalation exposure with rats at 1,300 ppm, central neurotoxicities such as obtundation, anesthesia and coma at 6,000 mg/kg by the oral route with rats. Furthermore, although exposure conditions such as doses were unknown, there were findings of narcosis, prostration, decreased hindleg movement, hunched posture, hypersensitivity, tremors, weakness, labored breathing, slowed breathing, muscle spasms, disorder of the visual and auditory organs, lung edema, lung bleeding, lung inflammation, findings suggesting liver toxicity such as increased relative weight (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007)). In addition, there are descriptions that acute effects on experimental animals were effects on the nervous system, lungs and liver (CEPA (1993)), and that acute toxicity symptoms by the oral, inhalation and dermal routes in rats and mice were

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depression of the central nervous system (SIAP (2003), ATSDR (2007)).
From the above, this substance was classified in Category 1 (central nervous system, respiratory organs, liver, kidney) and Category 3 (narcotic effects) because this substance affected the central nervous system, respiratory organs, liver and kidneys in addition to having narcotic effects.
(Note that this classification result was not based on the data on each xylene isomer but the isomer mixtures (Xylenes including those of unknown compositions). Refer to separate classifications for each single isomer).

Target organ effect/Multi exposure: Category 1(nervous system,respiratory apparatus)
By inhalation exposure (geometric mean concentration: 14 ppm, average exposure period: 7 years) to a solvent (containing toluene and ethylbenzene but not a benzene other than xylene), more than 70% of which was from exposure to a xylene isomer mixture, a significantly increased prevalence of anxiety, forgetfulness, inability to concentrate, dizziness, nausea, anorexia, reduced grip strength, and weakened muscle strength was observed in comparison with the non-exposed group. However, no significant difference was observed in hematological test items and biochemical test items such as parameters of liver functions (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007)). In addition, there are reports that by chronic occupational exposures, labored breath and dysfunction of the lungs were observed, and that among workers at a xylene manufacturing factory (15–40 ppm for 6 months to 5 years), headache, agitation, insomnia, dyspepsia and increased heartbeat rate in 33%, and nervous weakness and dysautonomia in 20% were observed. Furthermore, there are reports that in an epidemiological survey for paint workers who used xylene as a solvent, headache, memory loss, fatigue, encephalopathy caused by solvents, nervous weakness, dysfunction of the brain, disorder of electroencephalogram, development of organic psychiatric disorder and dementia, etc. were observed (Hazard Assessment Report (CERI, NITE, 2008), ATSDR (2007)).
Therefore, although there were many reports from combined exposure cases containing substances other than xylenes, it seemed that adverse effects on the nervous system and respiratory system might be caused by chronic inhalation exposure to this substance alone even if the exposure conditions were considered. Other than the above, although effects on the hemal system (anemia and decreased number of leukocytes) were also concerned, they were possibly due to

effects of benzene mixed in the solvent, and there is a report that no abnormality was observed in the hematological test of exposure cases in which the solvent was apparently free of benzene as described at the beginning of this column (ATSDR (2007)).
On the other hand, in experimental animals, no effects were observed at up to the concentrations above the guidance value range, and no findings were available which could specify the target organs in multiple repeated exposure tests of this substance (assumed as the vapour) with rats (converted guidance value: 1.30–5.23 mg/L/6 hours (LOEC)) for 6 weeks to 2 years and in an 13-week inhalation test with dogs (converted guidance value: 3.51 mg/L/6 hours (NOEC)) (Initial Risk Assessment Report (NITE, CERI, NEDO, 2005)).
From the above findings in humans, this substance was classified in Category 1 (nervous system, respiratory organs).

Respiratory toxic: Category 1
Effect on person : This substance is a hydrocarbon, but its kinematic viscosity could not be calculated because a basic value could not be obtained due to being a mixture. However, since each calculated kinematic viscosity of o-, m- and p- isomer (25 deg C) was 0.86, 0.67 and 0.70 mm2/s, respectively (calculated using each value of viscosity and density in HSDB (Access on December 2014)) and these values were similarly low, it seemed that the kinematic viscosity of a mixture should have a similar value. Therefore, this substance was classified in Category 1.

12. Ecological information

Product

Ecotoxicity
Acute toxicity: Classification not possible
Chronic toxicity: Classification not possible
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.

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Product Name: ANTOX MS-2N-D

Ingredient
2-sulfoethyl methacrylate, sodium salt
Ecotoxicity
Acute toxicity: No data
Chronic toxicity: No data
2-Hydroxyethanesulfonic acid sodium salt
Ecotoxicity
Acute toxicity: No data
Chronic toxicity: No data
Methacrylic acid
Ecotoxicity
Acute toxicity: Category 3
Fish: No data
Daphnia: No data
Algae: 72hrErC50: 14 mg/L[Pseudokirchneriella subcapitata]
Chronic toxicity: No Classification
Fish: No data
Daphnia: 21dayNOEC: 53 mg/L[Daphnia magna]
Algae: 72hrNOEC: 9.8 mg/L[Pseudokirchneriella subcapitata]
Persistence and degradability : Rapidly biodegradable
Bioaccumulative potential : No bioaccumulation
Hazardous to the ozone layer: Classification not possible
xylenes
Ecotoxicity
Acute toxicity: Category 2
Fish: 96hrLC50: 3.3 mg/L[Oncorhynchus mykiss]
Daphnia: 96hrLC50: 7.4 mg/L[Palaemonetes pugio]
Algae: No data
Chronic toxicity: Category 2
Fish: NOEC: 1.3 mg/L[Oncorhynchus mykiss]
Daphnia: No data
Algae: No data
Persistence and degradability : Not rapidly biodegradable
Bioaccumulative potential : No data
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 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.

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14. Transport information

International regulations	UN classification :	Not applicable
	UN number :	Not applicable
	Proper shipping name :	Not applicable
	Packing group :	Not applicable
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:		171

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.
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.