NIPPON NYUKAZAI CO., LTD.

SAFETY DATA SHEET

SDS: A5421-0300_E002
Date Prepared: 2020/02/05
Date Revised: 2023/01/10

Product Name: **MA-150-MF**

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

Product name:	MA-150-MF
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:	intermediate raw materials
Restrictions on use:	Seek expert judgment when using for purposes other than those recommended.

2. Hazards identification

Hazard category

Flammable liquids	Category 3
Serious eye damage/eye irritation	Category 2
Carcinogenicity	Category 1B

Label elements

Hazard pictograms:

Signal word: Danger

Hazard statements:
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.
H350 May cause cancer.

Precautionary statements:

Prevention
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P264 Wash hands and face thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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Response P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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+P313 IF exposed or concerned: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire : Use appropriate extinguishing media for extinction.

Storage P405 Store locked up.
P403+P235 Store in a well ventilated place. Keep cool.

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
Polyethyleneglycol monomethacrylate	86	25736-86-1	2-1045, 7-775	Public	Not applicable	Not applicable	Not applicable
Propyleneglycol monomethylether	14	107-98-2	2-404, 7-97	Public	Applicable	Not applicable	Not applicable
1,4-Dioxane	0-0.3	123-91-1	5-839	Public	Applicable	Less than regulation	Not applicable

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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). 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.

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
Polyethyleneglycol monomethacrylate	Not established	Not established	Not established	Not established
Propyleneglycol monomethylether	Not established	Not established	50ppm -mg/m3	100ppm -mg/m3
1,4-Dioxane	10ppm -mg/m3	1ppm Skin, 3.6mg/m3 Skin	20ppm Skin, -mg/m3	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（30℃）
Color:	Light yellow
Odor:	Peculiar odor
Melting point/freezing point:	-8(℃)
Initial boiling point and boiling range:	Solvent121(℃)
Flammability (solid, gas):	No data

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Upper/lower flammability or explosive limits:	Solvent2.7－11.8(%)
Flash point:	38(℃)（Seta Closed Cup）
Auto-ignition temperature:	Solvent277.5(℃)
Decomposition temperature:	No data
pH:	No data
Viscosity:	56(mPa･S)(30℃)
Kinematic viscosity:	No data
Solubility:	water：Soluble.
Partition coefficient: n-octanol/water:	No data
Vapour pressure:	Solvent1.150(Pa)(20℃)
Specific Gravity:	1.075－1.085(30℃)
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):	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:	Classification not possible
Serious eye damage/irritation:	Category 2
Respiratory sensitization:	Classification not possible
Skin sensitization:	Classification not possible
Mutagenicity:	Classification not possible
Carcinogenicity:	Category 1B
Reproductive toxicity:	Classification not possible

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Target organ effect/Single exposure: Classification not possible
Target organ effect/Multi exposure: Classification not possible
Respiratory toxic: Classification not possible

Ingredient
Polyethyleneglycol monomethacrylate
No Data
Propyleneglycol monomethylether
Acute toxicity (oral): No Classification
LD50:> 5000 mg/kg[rat]
Acute toxicity (dermal): No Classification
LD50: 13000-14100 mg/kg[rabbit]
Acute toxicity (inhalation): Exempt classification (Gas)
Category 4 (Vapour)
LC50: 7395-9258 ppm[mouse]
Classification not possible (Dust/Mist)
Skin corrosion/irritation: No Classification
Mild [rabbit]
Effect on animals : Based on results of "moderately irritating" in a rabbit skin irritation test (open Draize test) (Hazard Assessment Report (CERI, NITE) (2006)) and "slightly irritating" in a rabbit, rat and mouse skin irritation tests (EU-RAR No. 21 (2002)), the substance was classified into Category 2.
Serious eye damage/irritation: Category 2B
Mild [rabbit]
Effect on animals : Based on the results (SIDS (2003)) of low or mild irritation in multiple tests using rabbits, this substance was classified in Category 2B
Respiratory sensitization: Classification not possible
Effect on person : No data available.
Skin sensitization: Classification not possible
Effect on animals : There is a result of "not sensitizing" in a guinea pig skin sensitizing test (modified Maguire test) (SIDS (2001)). Since the test method used is not approved by OECD and the detailed data (such as positive rates) are unknown, classification was not possible due to lack of sufficient data.

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Product Name: MA-150-MF

Mutagenicity:	Classification not possible Due to the revision of the classification guidance, "out of classification" can no longer be selected, so "cannot be classified". That is, in vivo, a micronucleus test using mouse bone marrow erythrocytes was reported to be negative (SIDS (2003), ACGIH (7th, 2013)). In addition, in vitro, the Ames test, gene mutation test using Chinese hamster cell line (CHO, V79), chromosomal aberration test and micronucleus test are all negative (SIDS (2003), ACGIH (7th,). 2013)).
Carcinogenicity:	Classification not possible ACGIH:A4
Reproductive toxicity:	No Classification In two-generation reproductive tests by oral exposure to mice and inhalation exposure to rats, lengthened estrous cycles, decreased fertility, reduced pup survival and litter size were observed at the highest dose (3000 ppm) group of rats. However, the result was not used as the basis of classification, since these findings accompanied marked toxicity, as evidenced by persistent sedation and decreased body weights which were as much as 21% lower than the control group. For the other dose level rat and the mice dose groups, there were no effects on sexual function and fertility (SIDS (2001)). In developmental toxicity tests by inhalation exposure to rats and rabbits during organogenesis period (SIDS (2001)) and by oral exposure to rats, mice or rabbits during gestation period (SIDS (2001)), delayed sternebral ossification was observed in some tests but no adverse effects on fetal development including teratogenicity were detected. Since it is clear from appropriate tests with multiple animal species and by multiple exposure routes that the substance has no reproductive or developmental toxicity, it was classified as "Not classified".
Target organ effect/Single exposure:	Category 3(anesthetic action) Acute toxic signs related to narcotic action of the substance are reported as follows; somnolence, uncoordinated gait and ataxia by oral administration to rats (ECETOC 95 (2005)); laterally recumbent, generally unresponsive and central nervous system depression by inhalation exposure to rats (SIDS (2001)); and slight weakness and signs of general narcosis varying in intensity from slight drowsiness to deep anaesthesia by dermal exposure to rabbits (ECETOC 95 (2005)). Based on the data, the substance was classified into Category 3 (narcotic effects).

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	Target organ effect/Multi exposure:	No Classification In 13-week inhalation tests (6 hour/day), rats, mice and rabbits exhibited transient CNS depression and transient mild degenerative changes in the livers following high level exposure (SIDS (2001)). The NOEL/NOAELs were reported to be 300 ppm (1.11 mg/L) and 1000 ppm (3.68 mg/L), respectively, in rats; 1000 ppm (3.68 mg/L) in mice and 1000 ppm (3.68 mg/L) in rabbits (SIDS (2001)). Since the NOELs exceed the upper limit of the guidance value range, the substance corresponds to "Not classified" with inhalation exposure. In a 35-day oral test in rats, the NOEL was 919 mg/kg bw/day (90-day equivalence: 357 mg/kg bw/day) (SIDS (2001)). In a 90-day dermal test in rabbits the NOEL was 2 mL/kg bw/day (1840 mg/kg bw/day) (SIDS (2001). Since the NOELs exceed the upper limit of the guidance value range, the substance corresponds to "Not classified" with oral and dermal routes. Overall, the substance was classified as "Not classified" since it corresponds to "Not classified" with inhalation, oral and dermal exposure routes.
	Respiratory toxic:	Classification not possible Effect on person : No data available.
1,4-Dioxane		
	Acute toxicity (oral):	No Classification LD50: 4200-7339 mg/kg[rat]
	Acute toxicity (dermal):	No Classification LD50: 2100 mg/kg[rat]
	Acute toxicity (inhalation):	Exempt classification (Gas) Category 4 (Vapour) LC50: 9158-14236 ppm[rat] Classification not possible (Dust/Mist)
	Skin corrosion/irritation:	Category 2 Effect on animals : Based on results of "moderately irritating" in a rabbit skin irritation test (open Draize test) (Hazard Assessment Report (CERI, NITE) (2006)) and "slightly irritating" in a rabbit, rat and mouse skin irritation tests (EU-RAR No. 21 (2002)), the substance was classified into Category 2.

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Serious eye damage/irritation:	Category 2A Effect on person : not entered, Although obvious positive reactions are reported for exposed humans, there is no report of corrosive (Hazard Assessment Report (CERI, NITE) (2006), EU-RAR No. 21 (2002)). Effect on animals : In a rabbit eye irritation test, "severe chemosis, slight corneal opacity and conjunctival redness (conjunctival redness persisted to day 8 in one animal)" were observed (EU-RAR No. 21 (2002)). Based on the data, the substance was classified into Category 2A.
Respiratory sensitization:	Classification not possible Effect on person : No data available
Skin sensitization:	Classification not possible Effect on person : in human patch tests , positive results are reported (EU-RAR No. 21 (2002), NICNASPEC No. 7 (1998)). Effect on animals : In a guinea pig skin sensitizing test (Directive 84/449/EEC, B.6) (GLP), a negative result is reported (EU-RAR No. 21 (2002), original literature BASF (1993)). Based on the above reports, classification was not possible.
Mutagenicity:	No Classification Although there are positive and negative results in micronucleus test by oral gavage to mice (ATSDR (2007), Hazard Assessment Report (CERI, NITE) (2006), NICNAS No. 7 (1998)), the substance was classified as "Not classified" based on expert's decision for reliability of the test. There are reports of positive rat hepatic cell DNA damage test, DNA synthesis test and DNA repair test (Hazard Assessment Report (CERI, NITE) (2006), NICNAS No. 7 (1998), PATTY (5th, 2001)) and negative Ames test, mouse lymphoma test and chromosomal aberration test (Hazard Assessment Report (CERI, NITE) (2006)).
Carcinogenicity:	Category 1B ACGIH:A3, EPA:Likely to be carcinogenic to humans, IARC:2B, NTP:R, Japan Society for Occupational Health:2B

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Reproductive toxicity:	Classification not possible In developmental toxicity tests in rats by oral administration (Hazard Assessment Report (CERI, NITE) (2006)) or inhalation exposure (Initial Environmental Risk Assessment of Chemicals (Ministry of the Environment) vol. 2 (2003)) during the organogenesis period, no adverse effects on fetal development were seen while decreased fetal weight and delayed ossification were observed in some tests. However, classification was not possible due to lack of data for sexual function and fertility.
Target organ effect/Single exposure:	Category 1(central nerve system) Category 3(anesthetic action,respiratory tract irritation) Based on findings of dizziness, sleepiness and unconsciousness in humans following inhalation exposure (Initial Environmental Risk Assessment of Chemicals (Ministry of the Environment) vol. 2 (2003)), the substance was classified into Category 1 (central nervous system). Narcotic effects are reported in rats following inhalation at 155 mg/L (EU-RAR 21 (2002)) and rabbits following oral exposure at 6600 mg/kg (ATSDR (2007)). The substance was classified into Category 3 (narcotic effects). The substance is irritating to the nose and throat in humans (EU-RAR 21 (2002), ATSDR (2007)). In an inhalation test in rats, irritation of mucous membranes of the respiratory tract was observed (EU-RAR 21 (2002)). Based on these results, the substance was classified into Category 3 (respiratory tract irritation).
Target organ effect/Multi exposure:	Category 1(kidney,liver,central nerve system) Category 2(respiratory apparatus) In a case report of 5 workers who died following exposure to the substance, hemorrhage and necrosis in the kidney and necrosis in the liver are reported (Hazard Assessment Report (CERI, NITE) (2006)). There is a case report that a worker who had been exposed for one week in a closed, non ventilated room without respiratory equipment showed hypertonia, neurological symptoms, kidney failure, renal cortex necrosis, severe centrilobular necrosis in the liver and demyelination and partial loss of nerve fibre tissue in the brain (EU-RAR No. 21 (2002)). Based on the data, the substance was classified into Category 1 (kidney, liver, central nervous system). In a 2-year oral test in rats, degeneration of airway epithelium was observed at 16 mg/kg/day (corresponds to Category 2) (Initial Environmental Risk Assessment of Chemicals (Ministry of the Environment) vol. 2 (2003)). Based on this data, the substance was classified into Category 2 (respiratory system).

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Respiratory toxic:	Classification not possible Effect on person : No data available.

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.

Ingredient

Polyethyleneglycol monomethacrylate

Ecotoxicity	
Acute toxicity:	No data
Chronic toxicity:	No data

Propyleneglycol monomethylether

Ecotoxicity	
Acute toxicity:	No Classification
Fish:	96hrLC50:> 1000 mg/L[Oncorhynchus mykiss]
Daphnia:	48hrEC50:> 1000 mg/L[Daphnia magna]
Algae:	96hrEC50:> 1000 mg/L[Pseudokirchneriella subcapitata]
Chronic toxicity:	No Classification
Fish:	No data
Daphnia:	No data
Algae:	No data
Persistence and degradability :	Readily biodegradable
Bioaccumulative potential :	No data
Hazardous to the ozone layer:	Classification not possible

1,4-Dioxane

Ecotoxicity	
Acute toxicity:	No Classification
Fish:	96hrLC50:> 100 mg/L[Oryzias latipes]
Daphnia:	48hrEC50:> 1000 mg/L[Daphnia magna]
Algae:	72hrErC50:> 1000 mg/L[Pseudokirchneriella subcapitata]
Chronic toxicity:	No Classification
Fish:	No data

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Daphnia:	No data
Algae:	No data
Persistence and degradability :	Not 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 :	3
	UN number :	1993
	Proper shipping name :	FLAMMABLE LIQUID, N.O.S.
	Packing group :	Ⅲ
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:		127P

15. Regulatory information

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

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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.