

Safety Data Sheet
1. Identification

Product name	N-Methylaniline
Product code	MA
Manufacturer name	Mitsuboshi Chemical Co., Ltd.
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2. Hazards identification

GHS classification

Physical hazards

Flammable liquid Category 4

Health hazards

Acute toxicity (Oral) Category 4

Specific target organ toxicity Category 1 (kidney, haemal system)

- Single exposure Category 2 (nervous system)

Specific target organ toxicity Category 1 (haemal system, respiratory organs, liver, kidney)

- Repeated exposure

Environmental hazards

Hazardous to the aquatic environment(Acute) Category 2

Hazardous to the aquatic environment(Long-term) Category 2

GHS label elements

Pictograms and hazard symbol



Signal word

Danger

Hazard statements

Combustible liquid

Harmful if swallowed.

Causes damage to organs (haemal system, kidney)

May cause damage to organs (nervous system)

Causes damage to organs through prolonged or repeated exposure (haemal system, respiratory organs, liver, kidney)

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Precautionary statement

Prevention

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash hands thoroughly after handling.

Do not eat, drink or smoke when using this product.

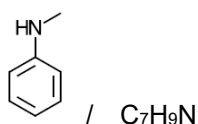
Avoid release to the environment.

First aid measures	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF exposed or concerned: Call a POISON CENTER or doctor/physician. Get medical advice/attention if you feel unwell. Collect spillage.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition / Information on

Ingredients

Substance/ Mixture	Substance
Components	N-Methylaniline
Synonyms	N-Methylphenylamine Methylaminobenzene
Concentration	>98.5%
Chemical formula	



CAS number	100-61-8
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4. First aid measures

If inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/ attention if you feel unwell.
If on skin	Wash with plenty of soap and water. Get medical advice / attention.
If in eyes	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If swallowed	Call a Poison Center or doctor/physician if you feel unwell. Make the victims drink water with active carbon.

5. Fire-fighting measures

Extinguishing Media	Water spray, Foam fire extinguisher, Powder fire extinguisher, Carbon dioxide fire extinguisher
Inappropriate fire extinguisher	Concentrated water jet
Specific hazard	Irritative or toxic fume and gases are generated in a fire.
Specific fire extinguishing method	Stop the supply of the combustible material, and extinguish a fire by appropriate fire extinguisher. Cool the neighbouring tanks and architectures by water spray to prevent the expansion of fire. Fire extinguishing activities should be done on the windward side of the fire. Prohibit the entry of non-essential personnel to the area of fire. Move the container away from the fire zone if it is not dangerous

Protective equipment and precautions for fire fighters

to do so.

Wear appropriate self-contained breathing apparatus and chemical resistant protective clothing that can protect eyes and skin.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Workers should wear appropriate protective equipment, and should avoid contact with eyes and skin and inhalation of gas. Prohibit the entry of non-essential personnel.

Environmental precautions

Prevent leaked substances from entering surface and ground water in order to avoid impact on the environment.

Containment and clean-up methods and materials

Promptly remove the all ignition sources. (Prohibit smoking and fireworks in the neighbouring area)

Collect spillage to metal- or glass-made container as possible.

Move the residual liquid to the safe place by absorption to sand or unreactive absorbent.

7. Handling and storage

Handling

Engineering control

Carry out the measures described in “8. Exposure controls/personal protection” and wear protective equipment.

Precautions for safe handling

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/ sparks /open flames/ hot surfaces. No smoking.

Avoid breathing dust/ fume/ gas/mist/ vapors/ spray.

Wash hands thoroughly after handling.

Do not eat, drink, or smoke when using this product.

Use only outdoors or in a well- ventilated area.

Avoid release to the environment.

Wear protective gloves/ protective clothing/ eye protection/ face protection.

Wear respiratory protection.

Wash contaminated clothing before reuse.

Please refer to “10. Stability and reactivity”.

Avoidance of contact

Storage

Storage condition

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Keep away from strong oxidizing reagents, food, and feed.

Ventilate through floor.

Store in a place that have no access to drain tube or sewer pipe.

Container and packaging materials

Use a container specified in the Fire Service Law or United Nations transportation regulations.

8. Exposure control / Personal protection

Control concentration

No setting

Threshold limit value	
Japan Society for Occupational Health (2019 edition)	No setting
ACGIH	TLV-TWA 0.5ppm (ICSC:2006)
Facility controls	In the place where the substance is stored and used, provide facilities for eye-washing and a shower for washing the entire body. Install ventilation equipment for maintaining air-polluting substances below the control concentration and threshold limit value when mist is emitted during processing at high heat.
Personnel protective equipment	
Respiratory protection	If ventilation is not enough, wear appropriate protective respiratory equipment.
Hand protection	Wear appropriate protective gloves.
Eye protection	Wear appropriate eye protection.
Skin and body protection	Wear appropriate protective clothing and face protection.

9. Physical and chemical properties

Physical state	Liquid (20°C, 1atm), pale yellow or pale brown
Color	Colorless or slightly yellow
Odor	Irritating, aniline odor
Melting point	-57°C(GESTIS)
Boiling point	194-196°C(GESTIS)
Flammability	Yes
Explosion Data	No data
Flash point	83°C(our company's data)
Auto-ignition temperature	500°C
Decomposition temperature	No data
pH	No data
Viscosity	2.568 cP (15°C); 1.766 cP (30°C) (HSDB)
Solubility	Water : 5.62 g/L (25°C) Soluble in alcohol, chloroform, ether; soluble in acetone, benzene, organic solvent.
Partition coefficient :octanol/water	1.66(GESTIS)
Vapor pressure	1.59 hPa(40°C)(GESTIS)
Specific gravity(density)	0.99 g/cm ³ (25°C)(GESTIS)
Relative vapor density(air=1)	3.7(GESTIS)

10. Stability and reactivity

Reactivity	Please refer to "Hazardous decomposition products".
Chemical stability	Stable under normal use and storage.
Conditions to avoid	Contact with open- flame, high temperature, incompatible substances.
Incompatible substance	Oxidizer, strong acid, especially nitric acid

Hazardous decomposition products

Heating causes combustion, harmful fume gas (Aniline, Nitrogen Oxide) is produced.

11. Toxicological information

Acute toxicity

Oral

Rat:LD50=716-782 mg/kg(CERI Hazard Assessment Report),Category 4.

Dermal

Classification not possible due to lack of data.

Inhalation(vapor)

Classification not possible due to lack of data.

Inhalation(mist)

Classification not possible due to lack of data.

Skin corrosion/irritation

Classification not possible due to lack of data.

Serious eye damage/eye irritation

Classification not possible due to lack of data.

Respiratory sensitization

Classification not possible due to lack of data.

Skin sensitization

Classification not possible due to lack of data.

Germ sell mutagenicity

Classification not possible due to lack of data.

Carcinogenicity

Classification not possible due to lack of data.

Reproduction toxicity

Classification not possible due to lack of data.

Specific target organ toxicity (single exposure)

There are no single-exposure data on this substance in humans. As for experimental animals, there is a report that in a single oral dose test with rats, a decrease in locomotor activity, cyanosis, and brown urine were observed at 512 mg/kg corresponding to Category 2: lateral position, prone position, contraction of the whole body, lacrimation, and hypothermia were observed at or above lethal dose of 1000 mg/kg (JECDB (Access on August 2017)). In addition, there are reports that in an single oral dose test with rabbits, at 180 mg/kg corresponding to Category 1, the blood hemoglobin level rose up to 23-45%, and decreased erythrocyte count, increased hematopoiesis in the bone marrow, albuminuria, glycosuria and dark brown discoloration of the urine were observed (DFGOT vol. 6 (1993)), and that minimal lethal dose was 240 mg/kg corresponding to Category 1, acute toxicity symptoms were cyanosis, prostration, weight loss, dyspnea, occasional terminal convulsion (DFGOT vol. 6 (1993), ACGIH (7th, 2001)). In dermal exposure, there is a report that in a test where this substance was applied to the skin of rabbits for one hour, cyanosis and death were observed at or above 3,000 mg/kg (DFGOT vol. 6 (1993), ACGIH (7th, 2001)). From the above information, this substance is considered to affect the haemal system and kidney at the doses corresponding to Category 1, and the nervous system at the dose corresponding to Category 2. Therefore, it was classified in Category 1 (haemal system, kidney) and Category 2 (nervous system).

Specific target organ toxicity (Repeated exposure)

There is no information in humans.

In a 28-day repeated oral dose toxicity test with rats, the following items were observed: hyperemia and pigment deposit

of the spleen, hyaline droplet degeneration in the kidney at or above 5 mg/kg/day (converted guidance value: 0.6 mg/kg/day) within a guidance value range for Category 1, decreased hematocrit level and erythrocytes count, increased reticulocytes ratio, increased hematopoiesis in the bone marrow, extramedullary hematopoiesis in the liver and spleen at or above 25 mg/kg/day (converted guidance value: 7.8 mg/kg/day), prothrombin time extension, an increase in total bilirubin, yellowish-brown urine, deposit of pigment at the proximal tubules in the kidney at 125 mg/kg/day (converted guidance value: 38.9 mg/kg/day) (JECDB (Access on August 2017), Environmental Risk Assessment for Chemical Substances, Vol. 12 (Ministry of the Environment, 2014)). In addition, it is reported that in an inhalation exposure test with rats for 130 times (7 hours/day), the formation of Heinz bodies at 2.4 ppm = 10.5 mg/m³ (converted guidance value: 0.0123 mg/L) and death, methemoglobinemia, centrilobular hepatocellular necrosis in the liver, moderate kidney damage, pulmonary edema, and interstitial pneumonia at 7.6 ppm = 33.3 mg/m³ (converted guidance value: 0.038 mg/L) were observed (ACGIH (7th, 2001), Environmental Risk Assessment for Chemical Substances, Vol.12 (Ministry of the Environment, 2014)). From the above, in addition to mainly observed effects on the blood and others related to them, effects on the respiratory organs, liver, and kidney were also observed, therefore, it was classified in Category 1. Besides, this classification result was different from the previous one since a new information source was used.

Aspiration hazard

Classification not possible due to lack of data.

12. Ecological information

Hazard to the aquatic

Acute hazard

From 48-hour EC50 = 5.58 mg/L for crustacea (*Daphnia magna*) (Environmental Risk Assessment for Chemical Substances vol. 12 (Ministry of the Environment, 2014)), it was classified in Category 2.

Chronic hazard

If chronic toxicity data are used, then it is classified in Category 2 due to being not rapidly degradable (non-biodegradable, a degradation rate by BOD: 1.4% (J-CHECK, 1977)), and 21-day NOEC (reproduction inhibition) = 0.29 mg/L for crustacea (*Daphnia magna*) (Results of Aquatic Toxicity Tests of Chemicals conducted by Ministry of the Environment in Japan (Ministry of the Environment, 2017), Environmental Risk Assessment for Chemical Substances vol. 12 (Ministry of the Environment, 2014)).

If acute toxicity data are used for a trophic level for which

chronic toxicity data are not obtained, then it is classified in Category 3 due to being not rapidly degradable (non-biodegradable, a degradation rate by BOD: 1.4% (J-CHECK, 1977)), and 96-hour LC50 = 57.5 mg/L for fish (*Oryzias latipes*) (Environmental Risk Assessment for Chemical Substances vol. 12 (Ministry of the Environment, 2014)).

From the above results, it was classified in Category 2.

Hazard to the ozone layer
mobility

No information available

13. Disposal consideration

Residual waste

For disposal, follow relevant regulations and local authority standards.

Dispose of contents / container by a special waste disposal contractor who received permission from the local governor. When consigning waste to a contractor, be sure to provide sufficient notice of hazards and toxicity.

Contaminated packaging

Containers should be cleaned and recycled, or appropriate disposal according to relevant laws and local government standards.

When empty containers are discarded, contents should be completely removed.

14. Transport information

International regulations

UN number

2294

Proper shipping name

N-methylaniline

Class

6.1

Packing groupe

III

Marine pollutant

Applicable

Chemicals listed in

Not applicable

MARPOL73/78 annex II and
with IBC code

Domestic regulations

Regulations on transport in your region should be checked by your own responsibility.

15. Regulatory information

Regulatory information about this substance in your country or in your region should be researched by your own responsibility.

Laws and Regulations in Japan

Act on the evaluation of
chemical Substances and
regulation of their
Manufacture, etc.

MITI Number : 3-106

Chemical Substance Name : N-Methylaniline

Act on confirmation, etc. of
release amounts of specific
chemical substances in the
environment and promotion of
improvements to the

Classification : II

Cabinet order No. : 2-90

Cabinet order name :

management thereof	
Industrial safety and health act (ISHA)	Chemical Substances Requiring Labeling and Delivery of Documents, etc.
Poisonous and deleterious substances control act	Deleterious Substances(Cabinet order)
Air pollution control act	Hazardous Air Pollutant
Act on prevention of marine pollution and maritime disaster	Applicable
Fire service act	Class-4 No.3 petroleum No.3, Not water-soluble fluid Dangerous grade 3

16. Other information

References

The original data are indicated in each item.

Disclaimer

The content of this SDS was prepared based on currently available materials, and the data and evaluations are not necessarily full and complete, therefore the content must be treated with caution. Moreover, the precautions shown here are for normal handling of the product. If you intend to use the product for special purposes, additional safety measures appropriate to the application and usage may be required.