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ISO 9001 : 2015

MATERIAL SAFETY DATA SHEET

1. Identification

n-Methyl aniline, GR 99%+
Code: M 1943

2. Hazard identification

2.1 Classification of the substance or mixture

Acute toxicity - Oral, Category 3

Acute toxicity - Dermal, Category 3

Acute toxicity - Inhalation, Category 3

Specific target organ toxicity \u2013 repeated exposure, Category 2

Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Hazard statement(s)

Danger

H301 Toxic if swallowed

H311 Toxic in contact with skin

H331 Toxic if inhaled

H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

Response

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/\u2026

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P302+P352 IF ON SKIN: Wash with plenty of water/...

P312 Call a POISON CENTER/doctor/\u2026if you feel unwell.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P311 Call a POISON CENTER/doctor/\u2026

P314 Get medical advice/attention if you feel unwell.

P391 Collect spillage.

Storage

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal

P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3. Composition/information on ingredients

3.1 Substances

| Chemical name | Common names and synonyms | CAS number | EC number | Concentration |
|-----------------|---------------------------|------------|-----------|---------------|
| N-methylaniline | N-methylaniline | 100-61-8 | none | 100% |

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

In case of eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

If swallowed

Rinse mouth. Give a slurry of activated charcoal in water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Inhalation causes dizziness and headache. Ingestion causes bluish discoloration (cyanosis) of lips, ear lobes, and fingernail beds.

Liquid irritates eyes. Absorption through skin produces same symptoms as for ingestion. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Absorption, Distribution and Excretion

N-METHYLANILINE IS DISTRIBUTED IN THE LIVER, KIDNEY, LUNG, SMALL INTESTINE, BRAIN, & BLADDER TISSUE.

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: SMALL FIRE: Dry chemical, CO₂ or water spray. LARGE FIRE: Dry chemical, CO₂, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER

LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers.

Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

5.2 Specific hazards arising from the chemical

Special Hazards of Combustion Products: Toxic vapors are generated when heated. (USCG, 1999)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong acids and food and feedstuffs. Keep in a well-ventilated room. Store in an area without drain or sewer access. IN GENERAL, MATERIALS WHICH ARE TOXIC AS STORED OR WHICH CAN DECOMP INTO TOXIC COMPONENTS... SHOULD BE STORED IN A COOL, WELL-VENTILATED PLACE, OUT OF DIRECT RAYS OF THE SUN, AWAY FROM AREAS OF HIGH FIRE HAZARD, & SHOULD BE PERIODICALLY INSPECTED... INCOMPATIBLE MATERIALS SHOULD BE ISOLATED FROM EACH OTHER.

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 0.5 ppm (2 mg/cu m), skin.

Biological limit values

no data available

8.2 Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards
no data available

9. Physical and chemical properties

| | |
|--|---|
| Physical state | pale yellow to brown liquid |
| Colour | COLORLESS OR SLIGHTLY YELLOW LIQ |
| Odour | Weak, ammonia-like odor. |
| Melting point/ freezing point | -57\u00b0C(lit.) |
| Boiling point or initial boiling point and boiling range | 196\u00b0C(lit.) |
| Flammability | Class IIIA Combustible Liquid: Fl.P. at or above 60\u00b0C and below 93.33\u00b0C. Combustible. Gives irritating or toxic fumes (or gases) in a fire. |
| Lower and upper explosion limit / flammability limit | no data available |
| Flash point | 83\u00b0C(lit.) |
| Auto-ignition temperature | no data available |
| Decomposition temperature | no data available |
| pH | no data available |
| Kinematic viscosity | 2.568 cP @ 15\u00b0C; 1.766 cP @ 30\u00b0C |
| Solubility | In water: 30 g/L |
| Partition coefficient n-octanol/water (log value) | Log kow = 1.66 |
| Vapour pressure | 0.325 mmHg at 25\u00b0C |
| Density and/or relative density | 0.987 |
| Relative vapour density | 3.9 (Relative to Air) |
| Particle characteristics | no data available |

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability TURNS REDDISH BROWN ON STANDING.

10.3 Possibility of hazardous reactions

N-METHYLANILINE is an aryl an amine. Neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen is generated in combination with strong reducing agents, such as hydrides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

CAN REACT WITH OXIDIZING MATERIALS

10.6 Hazardous decomposition products

WHEN HEATED TO DECOMP, IT EMITS HIGHLY TOXIC FUMES OF /NITROGEN OXIDES/.

11. Toxicological information

Acute toxicity

Oral: no data available

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

12.1 Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

12.2 Persistence and degradability

The BOD of N-methylaniline in coarse-filtered Lake Superior harbor water over the course of 20 days was not sufficiently different from controls to calculate a degradation rate(1). Little BOD resulted when N-methylaniline was incubated at 21°C for 20 days in ground water, river water, or Lake Superior Harbor water(1). In a continuous biological treatment simulation test, complete DOC removal was achieved(3). N-Methylaniline (100 ppm) was moderately biodegradable in an activated sludge test with 42% total organic carbon removed(2). The test solution and acclimation procedure employed attempted to simulate industrial wastewater treated at the Fukushima treatment plant in Japan. Aberrant behavior of N-methylaniline in a semi-continuous activated sludge (SCAS) biodegradation test was found to result from inadequate acclimation of the inoculum(4). It was degraded by *Alcalignes* sp. and *Corynebacterium* sp., both isolated from the activated sludge(4).

12.3 Bioaccumulative potential

N-Methylaniline was found to have very low bioconcentration in fish using the procedures of the Ministry of International Trade and Industry (MITI) in Japan(1,2). Using its log Kow of 1.66(3), one would estimate a BCF of 11 for N-methylaniline using a recommended regression equation(4). This would indicate that N-methylaniline would not bioconcentrate in aquatic organisms(SRC).

12.4 Mobility in soil

Since the pKa of N-methylaniline is 4.848(2), N-methylaniline will be partially ionized at acidic environmental pHs and its adsorption to soil would be expected to be pH-dependent(SRC). The Koc for N-methylaniline predicted from molecular structure is 65(3). According to a suggested classification scheme(5), this estimated Koc suggests that N-methylaniline will be highly mobile in soil(SRC). Batch equilibrium studies used to determine the adsorption isotherms for N-methylaniline to a Podzol (4.85% OC pH 2.8), an Alfisol (1.25% OC, pH 6.7) and a sediment (1.58% OC, pH 7.1) yielded the results (soil, Freundlich adsorption constants (Kf), Freundlich exponent (1/n), Koc): Podzol, 22.29, 0.89, 460; Alfisol, 0.59, 0.78, 47; Sediment, 1.12, 0.77, 71(1). N-Methylaniline will be almost completely ionized at the pH of the Podzol and therefore ionic interactions may be dominant(1, SRC). N-Methylaniline reacts slowly with humates possibly by adding to quinoidal structures in the humic substances(4). Covalent bond formation is inferred by the lack of extractability of the aniline from the humic material as well as reactions with model compounds(4).

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: UN2294

IMDG: UN2294

IATA: UN2294

14.2 UN Proper Shipping Name

ADR/RID: N-METHYLANILINE

IMDG: N-METHYLANILINE

IATA: N-METHYLANILINE

14.3 Transport hazard class(es)

ADR/RID: 6.1

IMDG: 6.1

IATA: 6.1

14.4 Packing group, if applicable

ADR/RID: III

IMDG: III

IATA: III

14.5 Environmental hazards

ADR/RID: yes

IMDG: yes

IATA: yes

14.6 Special precautions for user

no data available

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

no data available

15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

| Chemical name | Common names and synonyms | CAS number | EC number |
|--|---------------------------|------------|-----------|
| N-methylaniline | N-methylaniline | 100-61-8 | none |
| European Inventory of Existing Commercial Chemical Substances (EINECS) | | | Listed. |
| EC Inventory | | | Listed. |
| United States Toxic Substances Control Act (TSCA) Inventory | | | Listed. |
| China Catalog of Hazardous chemicals 2015 | | | Listed. |
| New Zealand Inventory of Chemicals (NZIoC) | | | Listed. |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS) | | | Listed. |
| Vietnam National Chemical Inventory | | | Listed. |

Section 16: Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

