

# Safety Data Sheet

According to 1907/2006/EC, Article 31

Revision: 07/10/2023

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

- **Product Identifier** - NMA
- **Article Number** - 21350, 21351
- **CAS Number:** 25134-21-8
- **EC Number:** 246-644-8
- **Index Number:** 607-106-00-1
- **Relevant identified uses of the substances or mixture and uses advised against.**  
Laboratory chemicals, Manufacture of substances.
- **Application of the substance/preparation:** Hardener for epoxy resins.
- **Details of the supplier of the safety data sheet**

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## 2. Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08

Resp. Sens. 1

H334

May cause allergy or asthma symptoms or Breathing difficulties if inhaled.



GHS07

Acute Tox. 4

H302

Harmful if swallowed.

Skin Irrit. 2

H315

Causes skin irritation.

Eye Irrit. 2

H319

Causes serious eye irritation.

STOT SE 3

H335

May cause respiratory irritation.

### Information concerning particular hazards for human and environment:

Not applicable.

### Label elements

### Labelling according to Regulation (EC) No 1272/2008:

The substance is classified and labelled according to the CLP regulation.

### Hazard pictograms:



GHS07 GHS08

**Signal word:** Danger

### Hazard statements:

- H302 Harmful if swallowed.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
H335 May cause respiratory irritation.

### Precautionary statements:

- P284 [In case of inadequate ventilation] wear respiratory protection.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P321 Specific treatment (see on this label).  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

## 3. Composition/information on ingredients

### Chemical characterization: Substances

CAS No.	Description
25134-21-8	1,2,3,6-tetrahydromethyl-3,6-methanophthalicanhydride

**Synonyms:** Methyl nadic anhydride, Nadic methyl anhydride, Methyl norbornene dicarboxylic anhydride, MNA, NMA

**Formula:** C<sub>10</sub>H<sub>10</sub>O<sub>3</sub>

**Molecular Weight:** 178.18 g/mol

### Identification number(s):

EC number	246-644-8
Index number	607-106-00-1

## 4. First aid measures

### Description of first aid measures

#### General information:

Consult a physician. Show this SDS to the doctor in attendance.

#### After inhalation:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**After skin contact:** Immediately take off contaminated clothing and shoes. Wash with water and soap and rinse thoroughly.

**After eye contact:**

Rinse opened eye for 15 minutes under running water. Then consult a doctor.

**After swallowing:**

Do not induce vomiting; call for medical help immediately. Do NOT induce vomiting

Rinse mouth with water and provide fresh air. Call for a doctor.

**Information for doctor:****Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5. Firefighting measures

**Extinguishing media****Suitable extinguishing agents:**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substance or mixture.** Oxides of carbon.

**Advice for firefighters**

**Protective equipment:** Wear self-contained breathing apparatus for fire fighting if necessary.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Keep unprotected persons away.

**Environmental precautions:**

Do not allow product to reach sewage system or any water course.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7. Handling and storage

**Handling:****Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist.

**Information about fire and explosion protection:** No special measures required.

**Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep container tightly sealed.

**Special end use(s):** No further relevant information available.

## 8. Exposure controls/personal protection

**Additional information about design of technical facilities:** No further data; see item 7.

**Control parameters**

**Ingredients with limit values that require monitoring at the workplace:**

Not required.

**Additional information:** The lists valid during the making were used as basis.

**Exposure controls:**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Avoid contact with eyes and skin.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

**Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

**Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product, the substance, the preparation.

Due to missing tests no recommendation to the glove material can be given for the product, the preparation, the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Full contact:** Nitrile rubber, minimum layer thickness of 0.4mm and break through time 480min.

**Splash contact:** Nitrile rubber, minimum layer thickness of 0.11mm and break through time of 30 minutes.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection**

Tightly sealed goggles

**Body protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific

workplace.

**Limitation and supervision of exposure into the environment:** Do not let product enter drains.

## 9. Physical and chemical properties

**Information on basic physical and chemical properties**

**General information**

**Appearance:**

**Form:** viscous liquid  
**Color:** Not determined. Light yellow

**Odor:** Characteristic

**Odor threshold:** Not determined

**pH value:** Not determined

**Change in condition**

**Melting point/Melting range:** Undetermined

**Boiling point/Boiling range:** Undetermined

**Flash point:** 135 °C

**Flammability:** Not applicable

**Ignition temperature:**

**Decomposition temperature:** Not determined

**Self-igniting:** Not determined

**Danger of explosion:** Product does not present an explosion hazard

**Explosion limits:**

**Lower:** Not determined

**Upper:** Not determined

**Vapor pressure at 20°C:** Not determined

**Density at 25°C:** 1.23 g/cm<sup>3</sup>

**Relative density:** Not determined

**Vapor density:** Not determined

**Evaporation rate:** Not applicable

**Solubility in/**

**Miscibility with water:** Not determined

**Partition coefficient:** Not determined

**Viscosity:**

**Dynamic:** Not determined

**Kinematic:** Not determined

**Other information:** No further relevant information available

## 10. Stability and reactivity

**Reactivity** No further relevant information available.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11. Toxicological information

**Information on toxicological effects**

**LD/LC50 values relevant for classification:**

**111-30-8 glutaral**

Oral	LD50	914 mg/kg (rat)
Dermal	LD50	4,290 mg/kg (rat)

**Primary irritant effect:**

**on the skin:** Causes skin irritation.

**on the eye:** Causes serious eye irritation.

**Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

**Additional toxicological information:**

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

**CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

**Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

**Carcinogenicity:** Based on available data, the classification criteria are not met.

**Reproductive toxicity:** Based on available data, the classification criteria are not met.

**STOT-single exposure:** May cause respiratory irritation

**STOT-repeated exposure:** Based on available data, the classification criteria are not met.

**Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12. Ecological information

**Toxicity**

**Aquatic toxicity:** No further relevant information available

**Persistence and degradability:** No further relevant information available

**Bioaccumulative potential:** No further relevant information available

**Mobility in soil:** No further relevant information available

**Results of PBT and vPvB assessment**

**PBT:** Not applicable

**vPvB:** Not applicable.

**Other adverse effects:** No further relevant information available.

## 13. Disposal considerations

**Waste treatment methods**

**Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Recommendation:** Disposal must be made according to official regulations.

## 14. Transport information

**UN-Number**

**ADR, IMDG, IATA** UN3265

**UN proper shipping name**

**ADR, IMDG, IATA** Corrosive liquid, acidic, organic, n.o.s. (Methyl norbornene dicarboxylic anhydride)

**Transport hazard class(es)**

**ADR, IMDG, IATA**

**Class** 8 Corrosive substances

**Packing group**

III

**ADR, IMDG, IATA**

**Environmental hazards:**

Product contains environmentally hazardous substances glutaral

**Marine pollutant:**

No

**Special precautions for user:**

Warning: Corrosive substances

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

Not applicable

**Transport/Additional information:**

**ADR**

**Limited quantities (LQ)** 1L

**UN "Model Regulation":** Void

## 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Regulation (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16. Other Information

This information is based on our present knowledge and should assist the user with the safe handling of this material when properly applied. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Contact**

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**Abbreviations and acronyms:**

**ADR:** Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the international Carriage of Dangerous Goods by Road)

**IMDG:** International Maritime Code for Dangerous Goods

**IATA:** International Air Transport Association

**GHS:** Globally Harmonized System of Classification and Labelling of Chemicals

**EINECS:** European Inventory of Existing Commercial Chemical Substances

**ELINCS:** European List of Notified Chemical Substances

**CAS:** Chemical Abstracts Service (division of the American Chemical Society)

**PBT:** Persistent, Bioaccumulative and Toxic

**vPvB:** Very persistent and very bioaccumulative

**LC50:** Lethal concentration, 50 percent

**LD50:** Lethal dose, 50 percent