Safety Data Sheet
acc. to OSHA HCS

Printing date 05/06/2024 *Reviewed on 08/07/2023*

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1 Identification

· **Product identifier**

· **Trade name: Methylnadic anhydride**

· **Article number:** 29452
· **CAS Number:**
25134-21-8
· **EC number:**
246-644-8
· **Application of the substance / the mixture:** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de

· **Information department:** Product Safety Department Tel.: +49 6221 13840-35
· **Emergency telephone number:**
Emergency medical information in case of poisoning
Poison Information Center Mainz-Tel: +49 (0) 6131 19240
(Advice in German and English)

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS06

Acute Toxicity - Inhalation 3	H331 Toxic if inhaled.

GHS08

Sensitization - Respiratory 1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

GHS05

Eye Damage 1	H318 Causes serious eye damage.

GHS07

Acute Toxicity - Oral 4	H302 Harmful if swallowed.
Skin Irritation 2	H315 Causes skin irritation.
Sensitization - Skin 1	H317 May cause an allergic skin reaction.
Specific Target Organ Toxicity - Single Exposure 3	H335 May cause respiratory irritation.

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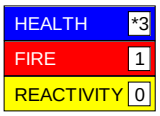
· **Label elements**
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:** GHS05, GHS06, GHS07, GHS08
· **Signal word:** Danger
· **Hazard statements:**
Harmful if swallowed.
Toxic if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.
· **Precautionary statements**
Avoid breathing mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 3
Fire = 1
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 1
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment:**
· **PBT:** PBT - Assessment not available.
· **vPvB:** vPvB - Assessment not available.

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3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description:**
25134-21-8 1,2,3,6-tetrahydromethyl-3,6-methanophthalicanhydride
· **Identification number(s):**
· **EC number:** 246-644-8
· **Additonal information:**
3,6-Methylene-1,2,3,6-tetrahydrophthalic anhydride, CAS. no. 826-62-0; CLP index no.: 607-105-00-6;
Classification according to Regulation (EC) No. 1272/2008: Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317;
Quantity: < 20%
· **Description:**
· **Empirical formula:** $C_{10}H_{10}O_3$
· **MW:** 178.19

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4 First-aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:** Provide fresh air. Consult a doctor immediately.
· **After skin contact:**
Wash off immediately with plenty of soap and water; rinse thoroughly; seek medical attention.
· **After eye contact:**
Rinse opened eye for several minutes with running water. Remove existing contact lenses, if possible, and continue rinsing. Consult an ophthalmologist immediately.
· **After swallowing:**
Rinse mouth and seek medical advice.
Do not induce vomiting!
· **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 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture**
In case of fire, development of toxic vapors and gases possible.
In case of fire, the following can be released:
Carbon monoxide and carbon dioxide
· **Advice for firefighters**
· **Protective equipment:** Wear self-contained breathing apparatus.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation
Avoid contact with eyes and skin.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to section 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
· **Protective Action Criteria for Chemicals**
· **PAC-1:** 0.49 mg/m³
· **PAC-2:** 5.4 mg/m³
· **PAC-3:** 32 mg/m³
· **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

· **Precautions for safe handling:**
Avoid contact with eyes and skin.
Ensure good ventilation/exhaustion at the workplace.

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· **Information about protection against explosions and fires:** No special measures required.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store only in unopened original receptacles.
· **Information about storage in one common storage facility:** Store away from oxidizing agents.
· **Further information about storage conditions:**
Protect from humidity and water.
Keep container tightly closed.
· **Specific end use(s):** No further relevant information available.

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Additional information about design of technical systems:** No further data; see section 7.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Store protective clothing separately.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
Short term filter device:
Filter A/P3
· **Protection of hands:**
Neoprene gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Protective gloves
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.
· **Penetration time of glove material:**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**
Natural rubber, NR
Nitrile rubber, NBR
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information:**
· **Color:** light yellow
· **Odor:** Pungent

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· **Odor threshold:**	Not determined.
· **Melting point/Melting range:**	Undetermined.
· **Boiling point/Boiling range:**	274.6 °C (526.3 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Explosion limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Flash point:**	140.7 °C (285.3 °F)
· **Decomposition temperature:**	Not determined.
· **pH-value:**	No information available
· **Viscosity:**	
· **Kinematic viscosity:**	Not determined.
· **Dynamic viscosity at 25 °C (77 °F):**	220-300 mPas
· **Solubility in / Miscibility with:**	
· **Water:**	Hydrolized.
· **Partition coefficient (n-octanol/water):**	log POW (40°C): 1,7
· **Vapor pressure:**	Not determined.
· **Vapor pressure:**	
· **Density at 20 °C (68 °F):**	1.24 g/cm³ (10.3478 lbs/gal)
· **Relative density:**	1,247 at 20°C
· **Other information**	Further physicochemical data are not available.
· **Appearance:**	
· **Form:**	Viscous
· **Important information on protection of health and environment, and on safety:**	
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Molecular weight**	178.19 g/mol

10 Stability and reactivity

· **Reactivity:** No further relevant information available.
· **Chemical stability:**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions:** No further relevant information available.
· **Conditions to avoid:**
Humidity
High temperatures
· **Incompatible materials:**
Avoid contact with:
Oxidizing agents
Strong acids
strong bases
Amines
alcohols
· **Hazardous decomposition products:** In case of fire: see section 5

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
Harmful if swallowed.
Toxic if inhaled.

· **LD/LC50 values that are relevant for classification:**		
Oral	LD50	>918 mg/kg (rat)

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· **on the skin:** Causes skin irritation.
· **on the eye:** Causes serious eye damage.
· **Sensitization:**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
· **Specific target organ toxicity - single exposure:** May cause respiratory irritation.
· **Additional toxicological information:**

· **Carcinogenic categories**
· **IARC (International Agency for Research on Cancer)** Substance is not listed.
· **NTP (National Toxicology Program)** Substance is not listed.
· **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

12 Ecological information

· **Toxicity:**
· **Aquatic toxicity:**
NOEC (21d,Daphnia magna): > 20 mg/l
EC50 (48h, Daphnia magna): > 100 mg/l
· **Persistence and degradability:** Not easily biodegradable
· **Bioaccumulative potential:**
Bioconcentration factor (BCF):
5,5
log Pow (40°C): 1,7
The bioaccumulative potential is considered to be low.
· **Mobility in soil:** No further relevant information available.
· **Results of PBT and vPvB assessment:**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects:**
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 3 (Self-assessment): extremely hazardous for water

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of in accordance with official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:**
Uncleaned packaging must be disposed of in the same way as the product in accordance with official regulations.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN2810
· **UN proper shipping name**	
· **DOT**	RQ Toxic, liquids, organic, n.o.s. (1,2,3,6-tetrahydromethyl-3,6-methanophthalicanhydride)

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· **ADR**	2810 TOXIC LIQUID, ORGANIC, N.O.S. (1,2,3,6-tetrahydromethyl-3,6-methanophthalicanhydride)
· **IMDG, IATA**	TOXIC LIQUID, ORGANIC, N.O.S. (1,2,3,6-tetrahydromethyl-3,6-methanophthalicanhydride)

· **Transport hazard class(es)**

· **DOT**

· **Class**	6.1 Toxic substances
· **Label**	6.1

· **ADR, IMDG, IATA**

· **Class:**	6.1 Toxic substances
· **Label:**	6.1
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	II
· **Environmental hazards**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Toxic substances
· **Hazard identification number (Kemler code):**	60
· **EMS Number:**	F-A,S-A
· **Stowage Category**	B
· **Stowage Code**	SW2 Clear of living quarters.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· **IMDG**	
· **Limited quantities (LQ)**	100 ml
· **Excepted quantities (EQ)**	Code: E4 Maximum net quantity per inner packaging: 1 ml Maximum net quantity per outer packaging: 500 ml
· **UN "Model Regulation":**	UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (1,2,3,6-TETRAHYDROMETHYL-3,6-METHANOPHTHALICANHYDRIDE), 6.1, II

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.
· **Section 355 (extremely hazardous substances):** Substance is not listed.

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· **Section 313 (Specific toxic chemical listings):** Substance is not listed.
· **TSCA (Toxic Substances Control Act):** ACTIVE
· **Hazardous Air Pollutants** Substance is not listed.
· **Proposition 65** Substance is not listed.
· **Chemicals known to cause cancer:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
· **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
· **Chemicals known to cause developmental toxicity:** Substance is not listed.

· **Cancerogenity categories**
· **EPA (Environmental Protection Agency)** Substance is not listed.
· **TLV (Threshold Limit Value)** Substance is not listed.
· **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
· **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS05, GHS06, GHS07, GHS08
· **Signal word** Danger
· **Hazard statements**
Harmful if swallowed.
Toxic if inhaled.
Causes skin irritation.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause respiratory irritation.
· **Precautionary statements**
Avoid breathing mist/vapours/spray.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Product Safety Department
· **Contact:** +49 6221 13840-35
· **Date of preparation / last revision** 05/06/2024
· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
PBT: persistent, bioaccumulative, toxic substance (REACH)
vPvB: very persistent, very bioaccumulative substance (REACH)
REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
CLP: Regulation on classification, labelling and packaging of substances and mixtures
bw: body weight
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent

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LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Acute Toxicity - Inhalation 3: Acute toxicity – Category 3
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Damage 1: Serious eye damage/eye irritation – Category 1
Sensitization - Respiratory 1: Respiratory sensitisation – Category 1
Sensitization - Skin 1: Skin sensitisation – Category 1
Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3