

Safety data sheet

according to 1907/2006/EC, Article 31



Printing date 24.09.2014

Version number 2

Revision: 24.09.2014

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Mercurous nitrate dihydrate ≥ 97%, p.a.

Article number: 6605

CAS Number:

14836-60-3

EC number:

233-886-4

Index number:

080-002-00-6

Registration number

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Application of the substance / the mixture

Laboratory chemical

Application of the substance / the mixture

Laboratory chemical

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Carl Roth GmbH + Co.KG

Schoemperlenstraße 3-5

76185 Karlsruhe

Germany

Telefon: +49/(0)721 5606-0

Telefax: +49/(0)721 5606-149

e-mail: sicherheit@carlroth.de

Further information obtainable from: Department Health, Safety and Environment

1.4 Emergency telephone number:

Poison Centre Munich

Telefon +49/(0)89 19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute Tox. 2 H300 Fatal if swallowed.

Acute Tox. 1 H310 Fatal in contact with skin.

Acute Tox. 2 H330 Fatal if inhaled.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

T+; Very toxic

R26/27/28: Very toxic by inhalation, in contact with skin and if swallowed.

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R33: Danger of cumulative effects.

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Trade name: Mercurous nitrate dihydrate $\geq 97\%$, p.a.

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2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

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

Hazard pictograms

GHS06



GHS08



GHS09

Signal word Danger**Hazard statements**

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

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

P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

Additional information:

-

Labelling of packages where the contents do not exceed 125 ml**Hazard pictograms**

GHS06



GHS08



GHS09

Signal word Danger**Hazard statements**

H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

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

P302+P350 IF ON SKIN: Gently wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P310 Immediately call a POISON CENTER/doctor.

P405 Store locked up.

2.3 Other hazards

All chemicals are potentially dangerous. They are therefore only be handled by specially trained personnel with the necessary care.

Results of PBT and vPvB assessment

PBT: Not applicable.

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SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation: Substances

CAS No. Description

14836-60-3 Mercurous nitrate dihydrate

Identification number(s)**EC number:** 233-886-4**Index Number:** 080-002-00-6**Formula:** $\text{Hg}_2 \text{N}_2 \text{O}_6 \cdot 2 \text{H}_2\text{O}$ **Molar mass [g/mol]:** 561,22

SECTION 4: First aid measures



4.1 Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Remove breathing equipment only after contaminated clothing have been completely removed.

After inhalation:

Supply fresh air or oxygen; call for doctor.

After skin contact:

Immediately rinse with water.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for 10 minutes under running water. Then consult a doctor.

After swallowing:

Rinse out mouth and drink a glass of water. Do not induce vomiting.

Call for a doctor immediately and show the container or label.

4.2 Most important symptoms and effects, both acute and delayed

After absorption of large quantities:

Methaemoglobinaemia

IF IN EYES:

Eye damage

After swallowing:

irritations in the mouth, throat, oesophagus, gastrointestinal tract.

Nausea

Vomiting

bloody diarrhoea

Blood pressure drop

cardiac arrhythmia

collapse

renal failure

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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**Trade name: Mercurous nitrate dihydrate $\geq 97\%$, p.a.**

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SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

Use fire extinguishing methods suitable to surrounding conditions.
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents:

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

In the event of fire development of hazardous combustion gases or vapours possible.
Mercury vapours.

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

Carbon monoxide and carbon dioxide

5.3 Advice for firefighters**Protective equipment:**

Mouth respiratory protective device.

Wear self-contained respiratory protective device.

Wear fully protective suit.

Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Prevent fire-fighting water from entering surface water or groundwater.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Avoid formation of dust.

Wear personal protective equipment.

Avoid contact with the eyes and skin.

Do not breathe dust.

Evacuate the danger area, observe emergency procedures, consult an expert.

6.2 Environmental precautions

Do not allow to enter sewers/ground water or penetrate the soil.

Keep contaminated washing water and dispose of appropriately.

6.3 Methods and material for containment and cleaning up

Pick up mechanically.

Dispose of the material collected according to regulations.

Dispose contaminated material as waste according to item 13.

6.4 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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Work only in fume cupboard.

Restrict the quantity stored at the work place.

Keep containers, equipment and working place clean.

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Ensure good ventilation/exhaustion at the workplace.
Handle and open container with care.

Information about fire - and explosion protection:
Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.
Prevent any seepage into the ground.

Information about storage in one common storage facility:

Store away from foodstuffs.

Further information about storage conditions:

Store under lock and key and with access restricted to technical experts or their assistants only.
Store in dry conditions.
Keep container tightly sealed.

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection**Additional information about design of technical facilities:**

No further data; see item 7.

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: Not required.

Ingredients with biological limit values:**14836-60-3 Mercurous nitrate dihydrate**

BMGV (Great Britain)	20 µmol/mol creatinine
	Medium: urine
	Sampling time: random
	Parameter: mercury

Additional information:

The lists valid during the making were used as basis.

8.2 Exposure controls**Personal protective equipment:****General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.
Do not breathe dust.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

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Respiratory protection:

Required when dusts are generated.

Composite filter: Hg-P3 (colour code: red-white)

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.

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

Material of glovesNitrile, thickness: ≥ 0.11 mm

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 materialValue for the permeation: Level ≥ 6

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

As protection from splashes gloves made of the following materials are suitable:Nitrile rubber, thickness: ≥ 0.11 mmValue for the permeation: Level ≥ 6 **Eye protection:**

Tightly sealed goggles

Body protection:

Protective work clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties**General Information****Appearance:**

Form:	Solid
Colour:	Whitish
Odour:	Odourless
Odour threshold:	No information available.

pH-value:	No information available.
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Change in condition	
Melting point/Melting range:	Not applicable (decomposition).
Boiling point/Boiling range:	Undetermined.
Flash point:	Not applicable.
Flammability (solid, gaseous):	Product is not flammable.
Ignition temperature:	No information available
Decomposition temperature:	$> 70\text{ }^{\circ}\text{C}$
Self-igniting:	No information available
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	No information available.
Upper:	No information available.
Oxidizing properties:	No information available.
Vapour pressure:	Not applicable.
Density at $20\text{ }^{\circ}\text{C}$:	4.78 g/cm^3
Bulk density at $20\text{ }^{\circ}\text{C}$:	$\sim 2340\text{ kg/m}^3$
Relative density	No Information available.
Vapour density	No information available
Evaporation rate	No information available
Solubility in / Miscibility with water at $20\text{ }^{\circ}\text{C}$:	20 g/l
Partition coefficient (n-octanol/water):	No information available
Viscosity:	
Dynamic:	No information available.
Kinematic:	No information available.
9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactionsDanger of explosion with:

Activated charcoal
phosphorus
carbon

Strong reaction possible with:

Strong oxidants

10.4 Conditions to avoid

Strong Heating. (decomposition)

10.5 Incompatible materials:

No information available.

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10.6 Hazardous decomposition products:

In case of fire: see item 5.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity:****LD/LC50 values relevant for classification:**

Quantitative data on the toxicity of this product are not available.

Specific symptoms in biological assay:

No information available.

Primary irritant effect:**on the skin:**

Danger through skin adsorption.

on the eye:

Irritating effect.

after inhalation:

Absorption after inhalation of dusts.

Sensitisation:

No sensitising effects known.

Additional toxicological information: Danger through skin adsorption.**CMR effects:****Germ cell mutagenicity:**

No information available.

Carcinogenicity:

No information available.

Reproductive toxicity:

No information available.

Aspiration hazard:

No information available.

Specific target organ toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Additional toxicological information:**After absorption:**

Methaemoglobinemia

After swallowing:

irritations in the mouth, throat, oesophagus, gastrointestinal tract.

After swallowing large quantities:

burns in the mouth, throat, oesophagus and gastrointestinal tract, risk of perforation in the oesophagus and gastrointestinal tract.

Systemic effects:

Nausea

Vomiting

gastric pain

Diarrhoea

Blood pressure drop

cardiac arrhythmia

Circulatory collapse

renal failure

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Further information:

The product should be handled with the care usual when dealing with chemicals.

SECTION 12: Ecological information

12.1 Toxicity**Aquatic toxicity:**

Quantitative data on the ecological effect of this product are not available.

12.2 Persistence and degradability

No further relevant information available.

12.3 Bioaccumulative potential

No further relevant information available.

12.4 Mobility in soil

No further relevant information available.

Ecotoxicological effects:**Remark:**

Do not allow to enter waters, waste water, or soil!

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Additional ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

12.5 Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Other adverse effects**

No further relevant information available.

SECTION 13: Disposal considerations

Waste treatment methods**Recommendation**

This material and its container must be disposed of as hazardous waste.

The disposal is regionally differently regulated, therefore the kind of disposal is to be inquired at the responsible authorities.

Uncleaned packaging:**Recommendation:**

Disposal according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, IMDG, IATA

UN1627

14.2 UN proper shipping name

ADR

1627 MERCUROUS NITRATE, ENVIRONMENTALLY
HAZARDOUS

IMDG

MERCUROUS NITRATE, MARINE POLLUTANT

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IATA		MERCUROUS NITRATE
14.3 Transport hazard class(es) ADR, IMDG		
Class Label		6.1 Toxic substances. 6.1
IATA		
Class Label		6.1 Toxic substances. 6.1
14.4 Packing group ADR, IMDG, IATA		
		II
14.5 Environmental hazards:		
Marine pollutant:		Environmentally hazardous substance, solid; Marine Pollutant Yes (PP) Symbol (fish and tree)
Special marking (ADR):		Symbol (fish and tree)
14.6 Special precautions for user Danger code (Kemler): EMS Number: Segregation groups		
		Warning: Toxic substances. 60 F-A,S-A Heavy metals and their salts (including their organometallic compounds), mercury and mercury compounds
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code		
		Not applicable.
Transport/Additional information:		
ADR		
Limited quantities (LQ) Excepted quantities (EQ)		500 g Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g
Transport category Tunnel restriction code		2 D/E
IMDG		
Limited quantities (LQ) Excepted quantities (EQ)		500 g Code: E4 Maximum net quantity per inner packaging: 1 g Maximum net quantity per outer packaging: 500 g

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UN "Model Regulation":UN1627, MERCUROUS NITRATE,
ENVIRONMENTALLY HAZARDOUS, 6.1, II

SECTION 15: Regulatory information

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

National regulations:

Information about limitation of use:

In dealing with chemicals the national laws must be observed.
Employment restrictions concerning juveniles must be observed.

Breakdown regulations:

Class	Share in %
I	100.0

Waterhazard class:

Water hazard class 3 (Self-assessment): extremely hazardous for water.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 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.

Relevant phrases

Very toxic by inhalation and if swallowed.
Very toxic in contact with skin.
Very toxic in contact with skin and if swallowed.

Department issuing MSDS: Department: Health, Safety and Environment

Contact: Herr Dr. Hagel

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
PP: Severe Marine Pollutant
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
LD50*: Lethal Dose, 50 percent (Not relevant for classification)
LD50*: Lethal Concentration, 50 percent (Not relevant for classification)
Acute Tox. 2: Acute toxicity, Hazard Category 2
Acute Tox. 1: Acute toxicity, Hazard Category 1
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1

*** Data compared to the previous version altered.**