Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 09.10.2013 *Version number 4* *Revision: 09.10.2013*

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

· **Date of compilation:** 10.04.2006
· **1.1 Product identifier**

· **Trade name: Oxalic acid-dihydrate**
· **CAS Number:**
6153-56-6
· **EC number:**
205-634-3
· **Index number:**
607-006-00-8
· **Registration number:** 01-2119534576-33-XXXX
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the preparation:**
Bleaching agent
Catalyst
Intermediate
Complexing agent

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer / Supplier:**
BERGCHEMIE J.C. Bröcking & Co. GmbH
Rudolfstrasse 14
D-42285 Wuppertal
Germany
Phone: ++49 202 / 45 60 60
Fax: ++49 202 / 44 79 32

· **E-mail address of the competent person responsible for the Safety Data Sheet:** sdb@csb-online.de

· **Informing department:** Environment & Safety Department
· **1.4 Emergency telephone number:**
For Germany: Giftinformationszentrum Universitätsklinik Mainz
Phone: +49 6131 / 19 24 0

SECTION 2: Hazards identification

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


GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.


GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

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


Xn; Harmful

R21/22: Harmful in contact with skin and if swallowed.


Xi; Irritant

R41: Risk of serious damage to eyes.
· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.

(Contd. on page 2)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 09.10.2013 Version number 4 Revision: 09.10.2013

Trade name: Oxalic acid-dihydrate

(Contd. of page 1)

· **Hazard pictograms**

GHS05 GHS07

· **Signal word** Danger
· **Hazard statements**
H302+H312 Harmful if swallowed or in contact with skin.
H318 Causes serious eye damage.
· **Precautionary statements**
P260 Do not breathe dust.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P262 Do not get in eyes, on skin, or on clothing.
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+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterization: Substances**
· **CAS No. Designation:**
6153-56-6 Oxalic acid-dihydrate
· **Identification number(s):**
· **EC number:** 205-634-3
· **Index number:** 607-006-00-8

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:**
Immediately remove any clothing contaminated by the product.
Symptoms of poisoning may occur after several hours. Medical observation for at least 48 hours after the accident is recommended.
· **After inhalation:**
Supply fresh air; consult doctor in case of symptoms.
In case of unconsciousness bring patient into stable side position for transport.
· **After skin contact:**
Instantly wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
· **After eye contact:**
If skin irritation continues, consult a doctor.
Remove contact lenses, if present and easy to do.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; instantly call for medical help.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Danger:** Danger of gastric perforation.

(Contd. on page 3)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Oxalic acid-dihydrate

(Contd. of page 2)

· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
Carbon dioxide (CO_2), extinguishing powder or water spray/fog. Fight larger fires with water spray/fog or alcohol-resistant foam.
· **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
· **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide (CO) and Carbon dioxide (CO_2)
Corrosive gases/vapours
· **5.3 Advice for firefighters**
· **Protective equipment:** Wear self-contained breathing apparatus.
· **Additional information**
Cool endangered containers with water spray jet.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
If without risk possible, move drums with material away from dangerous area.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Avoid causing dust.
Do not breathe dust.
Use breathing protection against the effects of fumes/dust/aerosol.
Avoid contact with skin and eyes.
· **6.2 Environmental precautions:**
Do not allow to enter drainage system, surface or ground water.
Damp down dust with water spray jet.
Keep dirty washing water for appropriate disposal.
Inform respective authorities in case product reaches water or sewage system.
· **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Collect mechanically.
Send for recovery or disposal in suitable containers.
Dispose of the material collected according to regulations.
· **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Provide suction extractors if dust is formed.
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be removed regularly.
Do not breathe dust.
Avoid contact with skin and eyes.
Wear personal protection equipment
Make sure that all applicable workplace limits are observed.
· **Information about protection against explosions and fires:**
Protect against electrostatic charges.

(Contd. on page 4)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

(Contd. of page 3)

Protect from heat.
Keep ignition sources away - Do not smoke.
Do not spray on flames or red-hot objects.
Use explosion-proof apparatus / fittings and spark-proof tools.
Handle only outside or in explosion protected rooms.
Dust can combine with air to form an explosive mixture.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:**
Observe all local and national regulations for storage of water polluting products.
Store in the original container.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
Do not store together with alkalis (caustic solutions).
· **Further information about storage conditions:**
Store container in a well ventilated position.
Store in cool, dry conditions in well sealed containers.
Protect from heat and direct sunlight.
Store only outside or in explosion proof rooms.
· **7.3 Specific end use(s)** *No further relevant information available.*

SECTION 8: Exposure controls/personal protection

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

· **8.1 Control parameters**
· **Components with critical values that require monitoring at the workplace:**
Observe all workplace limits for dust.

· **DNELs**		
Oral	*DNEL long-term exposure - systemic effects*	*1.14 mg/kg bw/d (general population)*
Dermal	*DNEL acute / short-term exposure - local effects*	*0.35 mg/cm² (general population)*
		0.69 mg/cm² (worker)
	DNEL long-term exposure - systemic effects	*1.14 mg/kg bw/d (general population)*
		2.29 mg/kg bw/d (worker)
Inhalative	*DNEL long-term exposure - systemic effects*	*4.03 mg/m³ (worker)*

· **PNECs**	
PNEC	*0.1622 mg/l (aqua (freshwater))*
	1.622 mg/l (aqua (intermittent releases))
	0.01622 mg/l (aqua (marine water))
	1550 mg/l (STP)

· **Additional information:** *The lists that were valid during the compilation were used as basis.*

· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and food.
Instantly remove any contaminated garments.
Do not eat, drink or smoke while working.
Avoid contact with the eyes and skin.
Do not breathe dust.
Wash hands during breaks and at the end of the work.
Use skin protection cream for preventive skin protection.
· **Breathing equipment:** *Use breathing protection in case of dust formation.*

(Contd. on page 5)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Oxalic acid-dihydrate

(Contd. of page 4)

· **Recommended filter device for short term use:** Partikelfilter EN 143 Type P2
· **Protection of hands:**
Acid resistant gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Material of gloves**
Poly vinyl chloride - PVC
Recommended thickness of the material: ≥ 0.5 mm
Fluorocarbon rubber (Viton) - FKM
Recommended thickness of the material: ≥ 0.4 mm
Nitrile rubber - NBR
Recommended thickness of the material: ≥ 0.35 mm
Butyl rubber - BR
Recommended thickness of the material: ≥ 0.5 mm
Natural rubber - NR
Recommended thickness of the material: ≥ 0.5 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 material**
Penetration time: ≥ 8 hours
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 safety glasses
· **Body protection:**
Acid resistant protective clothing
Antistatic protective clothing
Body protection must be chosen depending on activity and possible exposure.
· **Limitation and supervision of exposure into the environment**
Do not allow to enter drainage system, surface or ground water.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	crystalline
Colour:	off white
· **Smell:**	odourless
· **Odour threshold:**	not determined
· **pH-value (100 g/l) at 20 °C:**	~1
· **Change in condition**	
Melting point/Melting range:	98 - 100 °C
Boiling point/Boiling range:	not determined
Setting temperature / range:	not determined
· **Flash point:**	not applicable
· **Inflammability (solid, gaseous)**	Product is not inflammable.
· **Ignition temperature:**	not determined
· **Decomposition temperature:**	> 100 °C
· **Self-inflammability:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. Formation of ignitable/explosive dust/air mixtures possible.
· **Critical values for explosion:**	
Lower:	Not determined.

(Contd. on page 6)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: Oxalic acid-dihydrate

(Contd. of page 5)

Upper:	Not determined.
· **Oxidizing properties**	none
· **Vapor pressure:**	Not applicable.
· **Density at 20 °C:**	1.65 g/cm³
· **Bulk density at 20 °C:**	800 - 900 kg/m³
· **Relative density**	not determined
· **Vapour density (AIR = 1):**	not applicable
· **Evaporation rate**	not applicable
· **Solubility in / Miscibility with Water at 20 °C:**	102 g/l
· **Partition coefficient (n-octanol/water) at 30 °C:**	-0.81 log POW
· **Viscosity:**	
dynamic:	Not applicable.
kinematic:	Not applicable.
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** Reacts with strong oxidizing agents
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
Avoid impact, friction, heat, sparks, electrostatic charges.
Decomposes before melting.
· **10.3 Possibility of hazardous reactions**
Violent reaction with concentrated alkali and oxidizing agents
Reacts with amines
Corrosive action on metals
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:**
Strong oxidizing agents
Alkaline materials
Amines
· **10.6 Hazardous decomposition products:**
Corrosive gases/vapours
Carbon monoxide (CO) and Carbon dioxide (CO_2)

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	375 mg/kg (rat)
Dermal	LD50	20000 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** Longer lasting and/or repeated skin contact may cause irritation.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **inhalation:** May cause irritation.
· **Sensitization:** No sensitizing effect known.
· **Additional toxicological information:** Danger by skin resorption.

(Contd. on page 7)

BERGCHEMIE

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 09.10.2013 *Version number 4* *Revision: 09.10.2013*

Trade name: Oxalic acid-dihydrate

(Contd. of page 6)

· ***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)***
According to present knowledge no CMR-effects known.

SECTION 12: Ecological information

· ***12.1 Toxicity***

· ***Aquatic toxicity:***	
EC50/16 h	*41 mg/l (pseudomonas putida)*
EC50/24 h	*61 mg/l (water flea (daphnia magna))*
LC50/48 h	*160 mg/l (leuciscus idus)*

· ***12.2 Persistence and degradability*** *No further relevant information available.*
· ***12.3 Bioaccumulative potential*** *An accumulation in organisms is not expected (log P(o/w) <1).*
· ***12.4 Mobility in soil*** *No further relevant information available.*
· ***Additional ecological information:***
· ***Chemical Oxygen Demand (COD-value):*** *not determined*
· ***Biochemical Oxygen Demand (BOD5-value):*** *100 mg O_2/g*
· ***AOX-indication:*** *The product does not contain organically bounded halogens (AOX-free).*
· ***General notes:***
Do not allow product to reach ground water, water bodies or sewage system.
Water hazard class 1 (Assessment by list): slightly hazardous for water
· ***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

· ***13.1 Waste treatment methods***
· ***Recommendation*** *Disposal must be made according to official regulations.*
· ***Waste disposal key number:*** *According to local/national regulations.*
· ***European waste catalogue:***
Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

· ***Uncleaned packagings:***
· ***Recommendation:*** *Disposal must be made according to official regulations.*
· ***Recommended cleaning agent:*** *Water*

SECTION 14: Transport information

· ***14.1 UN-Number***	
· ***ADR, IMDG, IATA***	*Void*
· ***14.2 UN proper shipping name***	
· ***ADR, IMDG, IATA***	*Void*
· ***14.3 Transport hazard class(es)***	
· ***ADR***	
· ***Class***	*Void*
· ***Label***	-
· ***IMDG, IATA***	
· ***Class***	*Void*
· ***14.4 Packing group***	
· ***ADR, IMDG, IATA***	*Void*

(Contd. on page 8)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 09.10.2013 Version number 4 Revision: 09.10.2013

Trade name: Oxalic acid-dihydrate

(Contd. of page 7)

· **14.5 Environmental hazards:**	
· **Marine pollutant:**	NO
· **14.6 Special precautions for user**	Not applicable.
· **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	Not dangerous according to the above specifications.
· **UN "Model Regulation":**	-

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:** Employment restrictions concerning young persons must be observed.

· **Decree to be applied in case of technical fault:** Directive 96/82/EC does not apply.

· **Water hazard class:**
Water hazard class 1 (Assessment by list): slightly hazardous for water
ID-Number: 166

· **Other regulations, limitations and prohibitive regulations**

· **Substances of very high concern (SVHC) according to REACH, Article 57**
The substance is not a SVHC and is not included in the Candidate List.

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

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Reasons for changes:**
The Material Safety Data Sheet has been revised. Changes in the respective chapters are characterized in the left side edge by *.
Changes in classification and labelling

· **Department issuing MSDS:**
C.S.B. GmbH
Düsseldorfer Str. 113
47809 Krefeld / Germany
Phone: +49 - 2151 - 652086-0
Fax: +49 - 2151 - 652086-9

· **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)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

· **Sources:** These data are based on information submitted by pre-suppliers.