

Safety data Sheet

according to (EG) Nr. 1907/2006



Date: November 5, 2018

Version: 18.02

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

Product identifier/trade name:	Duozon 100 L
Relevant identified uses of substance or preparation or uses warned against:	
Use of substance/preparation:	Biocide and oxidation product in water treatment
Company:	CEALIN - chemische Fabrik GmbH Im Kälberkamp 5 - 8 D - 31157 Sarstedt / Hannover
Contact:	info@cealin.de
Emergency telephone:	Poison information center north: Tel:+49 (0) 55119240

2. Possible dangers

2.1 Classification of substance/preparation:

Classification accord. to regulation (EG) no. 1272/2008

Met. Corr. 1H290 Can be corrosive in contact with metals

Skin Corr. 1B H314 Causes severe burns to skin and severe eye damages

Acute Tox. 4 H302 Injurious to health if swallowed

Eye Damage H 318 Causes severe eye damages

Aquatic Acute 1 H400 Very toxic for aquatic life

Aquatic Chronic 2 H411 Toxic for aquatic life with long lasting effects

Classification system:

The classification is according to actual EG-lists, it is completed by details from specific literature and company details.

2.2. Elements of classification

Classification according to regulation (EG) no. 1272/2008

The product is classified according to CLP-regulation.

Danger pictograms



Signal word: Danger

Danger determined components for labelling

Chlorine Oxides

Danger hints

H290 Can be corrosive on metals

H314 Causes severe burns of skin and severe eye damages

H410 Very toxic for aquatic life with long lasting effects

H302 Harmful if swallowed

Safety hints

P 273 Avoid release to the environment

P280 Wear suitable protective gloves/clothes/eye/face protection.

P303+P361+P353 AFTER CONTACT WITH SKIN (or hair): Take off immediately all contaminated clothing. Wash skin with water.

P305+P351+P338 AFTER CONTACT WITH EYES: Rinse some minutes carefully with water. Remove existing contact lenses if possible. Rinse more.

P301+P330+P331: AFTER HAVING SWALLOWED: Rinse mouth. Do not induce vomiting.

P310: Call immediately poison information center/doctor.

Additional hints:

EUH031 Develops toxic gases after contact with acids.

2.3 Other dangers

Chemicals in principle are dangerous. Only trained persons should handle with them carefully.

3. Compounds/details of ingredients**3.1 Substance:** not usable**3.2 Mixture:****Description:** Watery solution**Dangerous ingredients/Compounds of mixture:**

Mixture of Chlorine-I and Chlorine-III-oxides , Sodiamsalt, watery solution

Chlorine-I-Oxide w = 10 - 20 %

EG-Nr.: 231-668-3

Met. Corr. 1 H290, Skin Corr. 1 B H314, Eye dam. 1 H 318,

Aquatic Acute 1 H400, Aquatic Chronic 2 H411

Chlorine-III-Oxide w = 1 - 5 %

EG-Nr.: 231-836-6

Met. Corr. 1 H290, Acute Tox. 4 H302, Eye Dam. 1 H318, STOT Re. 2 H373,

Aquatic Acute 1 H400, Aquatic Chronic 3 H412

Sodiumhydroxide (NaOH) w = > 0,1 % - < 1 %

INDEX-No.: 011-002-00-6

EG-No.: 215-185-5

CAS-no.: 1310-73-2

Met.Corr. 1 H290, Skin Corr. 1B H314, Eye Dam. 1 H318

Other datas: The wording of the dangerous references please find in chapter 16

4. First aid measures*

4.1 Description of first aid measures

Symptoms and effects: Causes corrosions on eyes, skin and upper respiratory system.

Harmfull to cornea and eyelids.

After skin contact: Take off immediately all contaminated clothes.

Flush immediately with plenty of water and soap, if necessary obtain medical attention.

After eye contact: Flush immediately for 15 minutes with gently flowing water, obtain medical attention.

After inhalation: Take person to fresh air and lay quiet. If without conscience lay and transport in stable side position. Move person to fresh air.

After having swallowed: Only if conscious: Flush immediately the mouth and drink (200-300 ml) of water. Do not induce vomiting. Seek medical advice immediately.

Medical hints: Treatment according to symptoms. No specific antidot. For prophylaxis of pulmonary edema: corticosteroid - dosing aerosol

4.2 Most important acute and delayed occuring symptoms and effects:

No more relevant informations available.

4.3 Hints for medical first aid or specific treatment:

No more relevant informations available.

5. Firefighting measures*

5.1 Extinguishing media

Suitable extinguishing media: Water sprayjet, foam

Unsuitable for quenching: Water jet

5.2 Special hazards by the substance or mixture:

Fire in environment can cause dangerous gases.

Chlorine dioxide gas development possible.

5.3 Hints for fire fighting:

Special protecting clothes during fire fighting:

Do not inhale fire gases during fire fighting, use gas mask, independent from circulating air.

General information:

Fire residuals and contaminated tempering water are to be removed in accordance with local authority regulations.

6. Accidental release measures*

6.1 Personal precautions, protection and accidental methods:

Wear suitable protective clothes, keep away from not protected persons. Ensure adequate ventilation.

6.2 Environmental protective measures:

Notify authorities responsible after contamination of waters or sewerage.

6.3 Methods and material for holding back and cleaning procedures:

Pump larger amounts into PE-container-pumps. Dilute residues with plenty of water, then remove with absorbent material (sand, silicagel or universal binding), and remove in accordance with regulations.

6.4 Reference to other passages:

Informations for safe handling see chap. 7

Informations for personal protection see chap. 8

Informations for removing see chap. 13

7. Handling and storage

7.1 Protection measures for safe handling:

Keep container tightly closed. Keep minimum standards acc. to TRGS 501.

7.2 Conditions for safe storage considering of intolerances:

Store in closed original container (standing upright) in dry and well-ventilated areas, avoid contact with acids (gase-development), or metals (corrosion). Protect against heat, UV, and frost. Keep only in original container.

7.3 Specific end-using

No more relevant informations available

8. Exposure controls/personal protection*

8.1 Controlling of following parameters:

Additional hints for technical equipments:

Leaflets BG-Chemie: M004, T015

Components with limit values to be controlled concerning workplace

Workplace limiting value according to TRGS 900 for

Chlorine dioxide: 0,1 ppm resp. 0,28 mg/m³

Chlorine: 0,5 ppm resp. 1,5 mg/m³

8.2 Limitation and Controlling of Exposition:

Technical protective measurements

Technical measurements and using of suitable working method have priority before using personal protective equipment.

Personal protective equipment:

Gas mask: If gases/steam occur put on a gas mask, DIN EN 141, (gas filter B/grey)

Hand protection: Full contact/Splash contact:
Glove material: PVC, Nitrile rubber
Glove thickness: 0.11 mm
Break through time: > 480 min

Wear proved safety gloves out of PVC (polyvinylchloride) or PE (polyethylen). Only wear chem. safety gloves with CE-sign inclusive four-digit test number. It is recommended to clarify the chemical persistence with the gloves manufacturer. Breakthrough times and soaking qualities of the material are to be considered.

Eye guard: Tightly closing safety goggles

Body guard: Protective clothing

General protective hygiene measures: When handling with chemicals observe general protective precautions.

9. Physical and chemical properties*

9.1 Statements to basic physical and chemical properties:

Physical state: Liquid

Colour: Yellowish

Odour: Lightly stinging own odour

State changes

Boiling point/boiling area: 103 °C

Melting point/metling area: - 25 °C

Flash point: ./.

Ignition: The product has no pyrophorous properties

Explosion limits: **lower:** n.a. **upper:** n.a.

Fire promoting properties: By chlorine oxides aplit of fire promoting (only dry product)

Steam pressure: (20 °C) appr. 14 mbar

Relative density: (20 °C) 1.20

Steam pressure:	(20 °C)	ca. 14 mbar
Relativ density:	(20 °C)	1,20
Solubility in water:	(20 °C)	mixable
pH-value:	(20 °C)	> 11
Viscosity:	(25 °C)	appr. 2,4 mPa.s

9.2 Other informations: Mixing with water: any (means: < = 90 %)

10. Stability and reactivity*

10.1 Reactivity: No dangerous reactions if regulations / hints for storage and handling are observed.

10.2 Chemical stability: The product is stable, if regulations / hints fo storage and handling are observed.

10.3 Possibility of dangerous reactions: Reaction with acids. Exotherme reaction. When heating up dangerous gases could be released.

10.4 Conditions to be avoided: Protect against heat and uv-rays.

10.5 Intolerable materials: Product acts corrosive on metals (Fe, Cu, Ni), acids.

10.6 Harzardous decomposition products: Chlorine dioxide, Oxygen, Chlorine

11. Toxicological informations*

11.1 Statements to toxicologigal effects

Acute Toxicity:

Acute oral toxicity: LD50: 1100 mg/kg
Species: Rat
Method: OECD Testing line 401

Acute inhalative toxicity: LC50 (rat): 10,5 mg/l
Exposition time: 1 h
Method: OECD Testing line 403
Rating: the component/the mixture is already after short-term inhalation slightly toxic.

Acute dermal toxicity: LD50: > 20000 mg/kg
Species: Rabbit
Method: OECD Testing line 402

Corrosion/Irritability on skin: Causes serious burns.

Species: Rabbit
Result: Weak skin irritation
Method: OECD Testing line 404
Watery solution (5 %)

Severe eye damage/irritation: Causes severe burns of skin and serious eye damages.

Species: Rabbit

Result: Eye irritation

Method: OECD Testing line 405

Watery solution (5 %)

Sensitization of respiratory tract/skin: Sensitization by breathing: not classified according to available informations.

Sensitization by skin contact: Not classified according to available informations.

Germ cell mutagenicity: Not classified according to available informations.

Carcinogenicity: Not classified acc. to avail. informations.

Reproduction toxicity: Not classified according to available informations.

Specific target organ toxicity with single exposition: Not classified accord. to avail. informations.

Specific target organ toxicity with repeated exposition: Not classified according to available informations.

Danger of aspiration: Not classified according to available informations.

11.2 Further informations

Further dangerous ingredients cannot be excluded. When handling with chemicals observe general protective measures

12. Ecological information*

Ecotoxicological informations of parts of the mixture:

LC50 fish (96 hours):

Minimal value: 6400 mg/l

Maximal value: 6500 mg/l

Median value: 6450 mg/l

Number of studies: 2

Reference: Tooby, T.E., P.A. Hursey, and J.S. Alabaster 1975. Acute Toxicity of 102 Pesticides and Miscellaneous Substances to Fish. Chem. Ind. (Lond.)

21:523-526

LC50 crustacean (48 hours):

Min. value: 500 mg/l

Max. value: 610 mg/l

Med. value: 555 mg/l

Number of studies: 2

Reference: Portmann, J.E., and K.W. Wilson 1971. The Toxicity of 140 Substances to the Brown Shrimp and Other Marine Animals. Shellfish Information Leaflet No.22 (2nd Ed.), Ministry of Agric. Fish. Food, Fish. Lab. Burnham-on-Crouch, Essex, and Fish Exp. Station Conway, North Wales: 12 p.;

Office of Pesticide Programs 2000. Pesticide Ecotoxicity Database Formerly: Environmental Effects Database (EEDB)). Environmental Fate and Effects Division, U.S. EPA, Washington, D.C.

Toxicity against Daphnie:
EC 50: 0,141 mg/l
Exposition time: 48 h
Species: Daphnia magna
Kind of test: Sweetwater
Method: OECD-testing line 202

Toxicity against algae:
EC 50: 0,0499 mg/l
Exposition time: 7 d
Species: Aalgae
Kind of test: Flowtest (Sweetwater)

Mobility and bio accumulation potential:

Duozon will be used in big quantities in open plants.
Duozon is water-soluble.
LID = 1 at application concentration of 30 mg/l.

Ecotoxic effects:

Duozon will be almost completely decomposed in the biological cleaning stage.

General hints:

Duozon 100 L is a strong oxidation product, it is allowed to get in pre-flooders oder fish waters only prediluted (Meas. maxim. 0,1 mg/l).

Results of PBT-vPVB-judgement:

Not usable for inorganic substances.

Other hints

The product is decomposing fastly in water and soil

13. Disposal considerations*

Product:

The relation to waste key numbers/waste characterization is to be made branch- and process specifically according to EAKV.
Little amounts can be released into canalization after diluting with plenty of water.

Unsuitable packing:

Unsuitable empty containers are to be eliminated concerning authority regulations. 15 01 10 (Packages which contain residuals of dangerous substances or which are contaminated by dangerous substances)

14. Transportation information

Classification according to ADR/GGVS and RID/GGVE:

Class: 5.1 (8) UN-Nr.: 3098 Class code: OC 1 Packing category: II

Name of goods: oxidizing liquid, corrosive n.a.g. (chlorine oxides) (E)

Special characteristics concerning 5.2.1.8 ADR: environmentally hazardous material:
symbol „fish and tree“

Other relevant informations for transport on land:

Limited quantity (LQ): **LQ 10** Special directions: 274 Category of transport: 2

Mass goods transportation in accordance to Application II of MARLPOL-agreement 73/78 and according to IBC- Code. Transport only in authorized, according to traffic regulations, containers.

Further information: Duozon 100 L is not listed in the GGVS/ADR-register, it is listed independently.

15. Regulatory information*

15.1 Regulations for safety, health- and environment protection / specific for substance or product:

National regulations:

Hints for limitation of employment:

Pay attention to limitation of employment for pregnant and breast-feeding women (MuSchArbV).
Pay attention to limitation of employment for young adults according to § 22 JArbSchG.

Storage class accord. to TRGS 510: 5.1 B

Water danger class: (2) self-classification

(Status: Mixing rule accord. to VwVwS, attachment 1, no. 5.3 AwSV)
clearly hazardous to water

5.2 Substance safety judgement: A substance safety judgement has not been made.

16. Other informations

Relevant sets:

H290 Can be corrosive in contact with metals

H314 Causes severe burns of skin and severe eye damages.

H302 Harmful if swallowed

H318 Causes severe eye damage

H372 Causes damage to organs through prolonged or repeated exposure

H400 Very toxic for aquatic life

H410 Very toxic for aquatic life with long lasting effects

H411 Toxic for aquatic life with long lasting effects

Conforming to raw material with EN 12671:2000. Baua: Reg.-Nr.: N-22565, N-22636, N-22638, N-22924

* Data changed/added to previous version

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)

LC50: Letal concentration, 50 percent

LD50: Letal dosis, 50 percent

LD50*: Letal dosis, 50 percent (not relevant for classification)

LC50*: Letal concentration, 50 percent (not relevant for classification)

Met. Corr.1: Corrosive to metals, Hazard Category 1

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1

The a. m. data are basing on the present date of our knowledge. They are showing -not binding- the application of our procedures. Existing rules and specifications have to be observed responsibly by the receiver of our product.