

Safety data Sheet

according to (EG) Nr. 1907/2006



Date: August 13, 2012

Version: 12.01

1. Name of substance resp. preparation and of company

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

Classification of substance/preparation:	Characterization of danger: corroding, dangerous for environment
Elements of characterization :	
Special danger references:	- injurious to health when swallowed - causes corrosions - develops toxic gases by contacting acids - very toxic to aquatic organisms

3. Compounds/details of ingredients

Dangerous ingredients:	Chlorine dioxides (ClO ₂) w = >10% < 25%		
EG-No.:	233-162-8	INDEX-No.:	017-026-01-0
Dangersymbol:	C;N	R-Sets:	R22-31-34-50
UN-No.:	3098	CAS-No.:	10049-04-4
Other datas:	The wording of the dangerous references you find in chapter 15		

4. 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.
After having swallowed:	Only if conscious: Flush immediately the mouth and drink (200-300 ml) of water. Do not induce vomiting. Obtain medical attention immediately.
Medical hints:	Treatment according to symptoms. No specific antidot. For prophylaxis of pulmonary edema: corticosteroid - dosing aerosol

5. Measures for fire fighting

Suitable extinguishing media: Water sprayjet, foam

Unsuitable for quenching: water jet

Special hazards by the material, its combustion products or arising gases :
Chlorine dioxide gas development

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. Measures when released unintentionally

Personal precautions, protection and accidental methods:

Suitable protective clothes, keep away from persons, not protected

Environmental protective measures:

Do not allow chemical to enter sewers or water ways

Methods and material for holding back and cleaning procedures:

Pump larger amounts into PE-container-pumps. Dilute residue with water, then remove with absorbent material (sand), and remove in accordance with regulations.

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

Protection measures for safe handling:

Keep container tightly closed.

Conditions for safe storage considering of intolerances:

Store in closed original container 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.

8. Limit and control of exposition /personal protective equipments

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 ml/m³ resp. 0,28 mg/m³

Personal protective equipment:

Gas mask:

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

Hand guard:

Wear proved safety gloves out of PVC (polyvinylchlorid) 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 measures

9. Physical and chemical characteristics

Physical state:	Liquid
Colour:	Yellowish
Odour:	Lightly stinging own odour
State changes	
Boiling point/boiling area:	103 °C
Melting point/melting area:	-25 °C
Flash point:	./.
Ignition:	The product has no pyrophorous properties
Explosionsgrenzen	lower: n.a. upper: n.a.
Fire promoting properties:	By chlorine oxides fire promoting (only dry product)
Steam pressure:	(20 °C) appr. 14 mbar
Relative density:	(20 °C) 1.20
Solubility in water:	(20 °C) mixable
pH-value:	(20 °C) >11
Viscosity:	(25 °C) appr. 2.4 mPa.s

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

10. Stability and reactivity

Reactivity:	No dangerous reactions if regulations / hints for storage and handling are observed.
Chemical stability:	The product is stable, if regulations / hints for storage and handling are observed.
Possibility of dangerous reactions:	Reaction with acids. Exotherme reaction.

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

Intolerable materials: Product acts corrosive on metals.

Harzardous decomposition products: ClO₂

11. Toxicological data

Mutagenity:	Test over 4 generations -not mutagen-
Subacute toxicity:	No toxic reactions at 100 ppm as ClO ₂
Chronic toxicity:	No toxic effects at 25 ppm during 2 years (mouse)
Further information:	Duozon 100 L acts strongly corrosive on skin, eyes, and mucous membranes. When chlorine oxides are released, respiratory ducts can be strongly irritated or corroded.

12. Ecological information

Ecotoxicological informations:

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.

Mobility and bio accumulation potential:

Duozon will be used in big quantities in open plants.

Duozon is water-soluble.

LID = 1 in application concentration of 30 mg/l.

Ecotoxicological effects:

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

General references:

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).

Other references:

The product is decomposing fastly in water and soil.

13. Waste disposal hints

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 when diluted with water.

Unsuitable packing:

Unsuitable empty containers are to be eliminated concerning authority regulations.

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: Explosive (oxidizing) working substance, corrosive n.a.g. (chlorine oxides)

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. Regulations

Marking according to EU-regulations

Danger symbol:	C;N
Danger marking:	Corrosive, dangerous for the environment
Contains:	Chlorine oxides (ClO ₂) w=>10% <25%
R-Sets:	22-31-34-50 Harmful if swallowed Contact with acids liberates toxic gas Causes burns Very toxic to aquatic organisms
S-Sets:	2-23-26-28 Keep out of the reach of children. 36/37/39- Do not breathe gas/fumes/vapour/spray. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice 45-61 After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing, gloves and eye/face protection. in case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions / safety data sheets.

National regulations

Water danger class: 2 (self classification)
Status: Mixing rule ref. VwVwS Append. 4, No. 3
Substance safety judgement: a safety judgement has not been practiced.

16. Further information

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

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.