

SAFETY DATA SHEET

CORTROL OS9990

1. Chemical product and company identification

Product name CORTROL OS9990

Recommended use and Limitations on use

Recommended use Water based dissolved oxygen scavenger

Company/undertaking identification

PT SUEZ WATER TECHNOLOGIES AND SOLUTIONS
INDONESIA

South Quarter, Tower A, 18th Floor
Unit F-G, Jl. RA Kartini Kav 8, Cilandak Barat
Jakarta Selatan 12430, Indonesia
Tel: +62 21 80669678

Emergency telephone

001-803-017-9114 (Indonesia)

+1 703-527-3887 (US)

2. Hazards identification

GHS classification

Physical hazards	Not classified.	
Health hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Specific target organ toxicity, single exposure	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, repeated exposure	Category 2
Environmental hazards	Not classified.	

Label elements

Pictogram



Signal word

Warning

Hazard statement

Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May cause damage to organs. May cause damage to organs through prolonged or repeated exposure.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe mist or vapor. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapours/spray.

Response

IF ON SKIN: Wash with plenty of water. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Call a POISON CENTER/doctor. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. If experiencing respiratory symptoms: Rinse cautiously with water for several minutes. Take off contaminated clothing and wash it before reuse. IF ON SKIN (or hair): If skin irritation occurs: IF SWALLOWED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get immediate medical advice/attention.

SAFETY DATA SHEET

CORTROL OS9990

Storage	Store in a well-ventilated place. Keep container tightly closed. Store in a closed container. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Supplemental information	None.

3. Composition / information on ingredients

Substance or mixture Mixtures

Chemical property

Chemical name	CAS Number	Concentration (%)
Ascorbic acid	50-81-7	10 - 30
Morpholine	110-91-8	<= 10

4. First aid measures

First aid measures for different exposure routes

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Skin contact	Wash with plenty of soap and water. Get medical attention if irritation develops and persists. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.
Ingestion	Get medical attention if symptoms occur.
Most important symptoms and effects	Severe eye irritation. May cause respiratory irritation. Skin irritation. May cause redness and pain.
Personal protection for first-aid responders	If you feel unwell, seek medical advice (show the label where possible).
Notes to physician	Provide general supportive measures and treat symptomatically.

5. Fire-fighting measures

Extinguishing media	Powder.
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials.
Protection of fire-fighters	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions	Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Spill clean-up methods	Use water spray to reduce vapors or divert vapor cloud drift. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

SAFETY DATA SHEET

CORTROL OS9990

7. Handling and storage

Handling

Technical measures	Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Precautions	Do not breathe mist or vapor. Avoid contact with eyes, skin, and clothing. When using, do not eat, drink or smoke.
Safe handling advice	Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Storage

Technical measures	Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).
Suitable storage conditions	Keep container tightly closed. Store away from incompatible materials (see Section 10 of the SDS).
Incompatible materials	Strong oxidizing agents. Strong acids. For further information, please refer to section 10 of the SDS.

8. Exposure controls/personal protection

Exposure limits

Indonesia. OELs (Minister of Manpower and Transmigration Regulation No. Per.13/MEN/X/2011 concerning Threshold Limit Values, Annex II)

Components	Type	Value
Morpholine (CAS 110-91-8)	TWA	20 ppm

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Morpholine (CAS 110-91-8)	TWA	20 ppm

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

Morpholine (CAS 110-91-8) Can be absorbed through the skin.

Engineering measures

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended.

Personal protective equipment

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Hand protection	Wear appropriate chemical resistant gloves.
Eye protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Liquid.
Form	Not available.
Color	Not available.

Odor Not available.

Odor threshold Not available.

pH (concentrated product) 6.9

pH Not available.

SAFETY DATA SHEET

CORTROL OS9990

Melting point/freezing point	-3 °C
Boiling point, initial boiling point, and boiling range	104 °C
Flash point	> 100 °C SETA(CC)
Auto-ignition temperature	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	18 mm Hg
Vapor pressure temp.	21 °C
Vapor density	< 1 (Air = 1)
Evaporation rate	< 1 (Ether = 1)
Relative density	1.08
Relative density temperature	21 °C
Density	Not available.
Solubility(ies)	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Decomposition temperature	Not available.
Viscosity	11 cps
Viscosity temperature	21 °C
Pour point	0 °C
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Specific gravity	1.082
VOC (Weight %)	8 % (Calculated)

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Not available.
Conditions to avoid	None.
Incompatible materials	Strong acids. Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological information

Acute toxicity	Not known.
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SAFETY DATA SHEET

CORTROL OS9990

Product	Species	Test Results
CORTROL OS9990 (CAS Mixture)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 5000 mg/kg, (Calculated according to GHS additivity formula)
<i>Inhalation</i>		
LC50	Rat	> 20 mg/l, 4 Hour, (Calculated according to GHS additivity formula)
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg, (Calculated according to GHS additivity formula)
Components	Species	Test Results
Ascorbic acid (CAS 50-81-7)		
Acute		
<i>Oral</i>		
LD50	Rat	11900 mg/kg
Morpholine (CAS 110-91-8)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	504 mg/kg
<i>Inhalation</i>		
LC50	Rat	8 mg/l, 4 Hour
<i>Oral</i>		
LD50	Rat	1680 mg/kg
Routes of exposure	Inhalation. Skin contact. Eye contact.	
Symptoms	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Skin irritation. May cause redness and pain.	
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
Skin sensitization	Not applicable.	
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
Carcinogenicity		
ACGIH Carcinogens		
Morpholine (CAS 110-91-8)	A4 Not classifiable as a human carcinogen.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Morpholine (CAS 110-91-8)	3 Not classifiable as to carcinogenicity to humans.	
Toxic to reproduction	This product is not expected to cause reproductive or developmental effects.	
Specific target organ toxicity - single exposure	May cause respiratory irritation.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	Not an aspiration hazard.	
Chronic effects	May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.	
Other information	Not available.	

SAFETY DATA SHEET

CORTROL OS9990

12. Ecological information

Ecotoxicological data

Product	Species	Test Results
CORTROL OS9990 (CAS Mixture)		
0% Mortality	Fathead Minnow	1000 mg/L, Static Bioassay with 48-Hour Renewal, 96 hour
Aquatic		
Crustacea	Daphnia magna	1000 mg/L, Static Screen, 48 hour
60% Mortality	Daphnia magna	2000 mg/L, Static Screen, 48 hour

Ecotoxicity Not available.

Bioaccumulation

Octanol/water partition coefficient log Kow
Morpholine -0.86

Mobility in soil No data available for this product.

Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Environmental fate The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Persistence and degradability

13. Disposal considerations

Not available.

14. Transport information

IATA

UN number UN2735
UN proper shipping name Amines, liquid, corrosive, n.o.s. (MORPHOLINE)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards No.
ERG Code 153
Special precautions for user Not available.

IMDG

UN number UN2735
UN proper shipping name AMINES, LIQUID, CORROSIVE, N.O.S. (MORPHOLINE)
Transport hazard class(es)
Class 8
Subsidiary risk -
Packing group II
Environmental hazards
Marine pollutant No.
EmS F-A, S-B
Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

SAFETY DATA SHEET

CORTROL OS9990

IATA; IMDG



15. Regulatory information

Applicable regulations

Additional information is given in the Safety Data Sheet.

CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon)

Not regulated.

CWC (Law of RI No. 9 of 2008 re: Prohibition on the Use of Chemicals as Chemical Weapon, March 10, 2008)

Not regulated.

Dangerous Substances that Must be Registered (Regulation of the Minister of Health of the Republic of Indonesia)

Not regulated.

Import and Distribution Control of Hazardous Materials (Minister of Trade Regulation No. 75/M-DAG/PER/10/2014, Annex I)

Not listed.

Precursor Chemicals (Ministry of Industry and Trade Decree No. 647/MPP/Kep/10/2004 concerning Regulation on Import of Precursors, Attachment 1)

Not regulated.

Prohibited Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 1)

Not regulated.

Restricted Substances (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment II, Table 2)

Not regulated.

Toxic and Hazardous Materials List (Decree of the Ministry of Industry on the Safeguarding of Toxic and Hazardous Materials in Industrial Plants, No. 148/M/SK/4/1985)

Not regulated.

Hazardous Substances Approved for Use (Government Regulation No. 74 of 2001 regarding Management of Hazardous and Poisonous Substances, Attachment I)

Listed substances

Not regulated.

Listed substances / Allowed until 2040

Not regulated.

**NSF Registered and/or meets
USDA (according to 1998
guidelines):**

Registration No. – 145980

Category Code(s):

G5 Cooling and retort water treatment products

G6 Boiler treatment products, steam line products – food contact

16. Other information

Issued by Not available.

Disclaimer Not available.

Issue date Oct-07-2015

Revision date 26/09/2018

**Legend to abbreviations and
acronyms used in the SDS** Not available.

**References and sources for
data used to compile the SDS** Not available.

Revision information This document has undergone significant changes and should be reviewed in its entirety.

SAFETY DATA SHEET

CORTROL OS9990

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