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Version: 10.2
Effective date: 09/10/2019
Previous Date: 12/02/2018

SAFETY DATA SHEET

FLOGARD MS6209 (CoolGard IN 112)

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

1.1. Product identifier

Trade name or designation of the mixture FLOGARD MS6209 (CoolGard IN 112)

Version number 10.2

Revision date 09/10/2019

Supersedes date 12/02/2018

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

Identified uses Water-based corrosion inhibitor

Uses advised against None known.

1.3. Details of the supplier of the safety data sheet

JV Process and Water Chemicals LLC

Address: Street V. Kadirov 10, Chirchik city,
Tashkent Region, Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

Email address: info@pwch.uz

www.pwch.uz

1.4. Emergency telephone number

Multilingual emergency number (24/7)

Street V. Kadirov 10, Chirchik city,
Tashkent Region,
Republic of Uzbekistan, 111727

Tel: +99871 209 10 40

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 as amended

Physical hazards

Corrosive to metals Category 1 H290 - May be corrosive to metals.

Health hazards

Acute toxicity, oral Category 4 H302 - Harmful if swallowed.

Skin corrosion/irritation Category 2 H315 - Causes skin irritation.

Serious eye damage/eye irritation Category 2 H319 - Causes serious eye irritation.

Environmental hazards

Hazardous to the aquatic environment, acute aquatic hazard Category 1 H400 - Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term aquatic hazard Category 2 H411 - Toxic to aquatic life with long lasting effects.



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2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Phosphoric acid, Zinc bis(dihydrogen phosphate)

Hazard pictograms



Signal word Warning

Hazard statements

- H290 May be corrosive to metals.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P302 + P352 IF ON SKIN: Wash with plenty of 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.
- P310 Immediately call a POISON CENTRE/doctor.
- P390 Absorb spillage to prevent material-damage.

Storage Not available.

Disposal Not available.

Supplemental label information None.

2.3. Other hazards None known.

SECTION 3: Composition/information on ingredients

Mixtures

Chemical description Inorganic solution

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Zinc bis(dihydrogen phosphate)	>= 25	13598-37-3 237-067-2	-	-	
Classification:	Acute Tox. 4;H302, Aquatic Acute 1;H400, Aquatic Chronic 2;H411				
Phosphoric acid	10 - < 20	7664-38-2 231-633-2	01-2119485924-24	015-011-00-6	#
Classification:	Met. Corr. 1;H290, Acute Tox. 4;H302, Skin Corr. 1B;H314				
					B

The classification of the above substance(s) is given, including the hazard class, category code and hazard statements which are assigned in accordance with their physicochemical, health and environmental hazards. Please refer to section 16 where the full text of each relevant H-statement is listed.

SECTION 4: First aid measures

4.1. Description of first aid measures

- Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Skin contact** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
- Eye contact** Rinse immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.



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Ingestion	Rinse mouth. Do not induce vomiting. Do not give anything to eat or drink. Call a physician or poison control centre immediately.
4.2. Most important symptoms and effects, both acute and delayed	Irritant effects.
4.3. Indication of any immediate medical attention and special treatment needed	Not available.

SECTION 5: Firefighting measures

5.1. Extinguishing media	
Suitable extinguishing media	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	Not available.
5.2. Special hazards arising from the substance or mixture	Oxides of phosphorus evolved in fire.
5.3. Advice for firefighters	
Special protective equipment for firefighters	Self contained breathing apparatus. (CEN : EN 137) Protective clothing (CEN : EN 469) Protective gloves (CEN : EN 659) Helmet (CEN : EN 443)
Special fire fighting procedures	Use standard firefighting procedures and consider the hazards of other involved materials. Prevent spillage and fire-fighting water from entering in public sewers or the immediate environment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures	
For non-emergency personnel	Wear protective clothing, gloves and safety goggles.
For emergency responders	Use personal protection recommended in Section 8 of the SDS.
6.2. Environmental precautions	Prevent from entering sewers or the immediate environment. Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.
6.3. Methods and material for containment and cleaning up	Absorb onto inert material and dispose of according to Hazardous Waste Regulations. Neutralise with soda ash. Remove small spills with plenty of water.
6.4. Reference to other sections	Please refer also to section no. 8 'Exposure controls' for further information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling	Acidic. Do not mix with alkaline material.
7.2. Conditions for safe storage, including any incompatibilities	Store in corrosive resistant container with a resistant inner liner. Store between 5-38°C to prevent crystallisation. Lower temperature may lead to crytallisation/precipitation.
7.3. Specific end use(s)	Only for professional and industrial users
Shelf life	720 days

SECTION 8: Exposure controls/personal protection

8.1. Control parameters	
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Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	2 mg/m ³
	TWA	1 mg/m ³

EU. Indicative Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU

Components	Type	Value
Phosphoric acid (CAS 7664-38-2)	STEL	2 mg/m ³
	TWA	1 mg/m ³

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Not available.

Derived no effect levels (DNELs)

Workers

Components	Value	Assessment factor	Notes
Phosphoric acid (CAS 7664-38-2)	Long-term, Local, Inhalation	1 mg/m ³	50 Repeated dose toxicity Repeated dose toxicity
	Long-term, Systemic, Inhalation	10,7 mg/m ³	
	Short-term, Local, Inhalation	2 mg/m ³	

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

Appropriate engineering controls Adequate ventilation to maintain air contaminants below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection Splash proof chemical goggles.
CEN : EN 166

Skin protection

- Hand protection Neoprene gloves (Protection against unintentional short-term contact)
Nitrile gloves (Protection against unintentional short-term contact)
Coating thickness: 0.5 mm
Penetration time: > 480 min
CEN : EN 374-1/2/3/4; EN 420

- Other Protective clothing.
CEN : EN ISO 13688; EN ISO 6529; EN 14605

Respiratory protection In case of insufficient ventilation, use a breathing mask with filter type: B2-P2
CEN : EN 140; EN 14387

Thermal hazards Not available.

Environmental exposure controls Prevent from entering in public sewers or the immediate environment.
Do not empty into drains, dispose of this material and its container to hazardous or special waste collection point.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Colour Colourless to yellow

Physical state Liquid

Odour Slight

Odour threshold Not available.

pH (concentrated product) < 1

pH in aqueous solution 2,2 (5% SOL.)

Melting point/freezing point < -34 °C



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Initial boiling point and boiling range	104 °C
Flash point	Not applicable.
Evaporation rate	< 1 (Ether = 1)
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Vapour pressure	15 mm Hg
Vapour pressure temp.	21 °C
Vapour density	< 1 (Air = 1)
Relative density	1,71
Relative density temperature	21 °C
Solubility	
Solubility (water)	100 %
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	50 cps
Viscosity temperature	21 °C
Explosive properties	Not available.
Oxidising properties	Not available.
9.2. Other information	
Pour point	< -34 °C
Shelf life	720 days
VOC	0 % (Calculated)

SECTION 10: Stability and reactivity

10.1. Reactivity	Not available.
10.2. Chemical stability	Material is stable under normal conditions.
10.3. Possibility of hazardous reactions	Not applicable.
10.4. Conditions to avoid	May in contact with certain metals, such as zinc, magnesium, release hydrogen gas which may form explosive mixtures in air.
10.5. Incompatible materials	Incompatible with bases.
10.6. Hazardous decomposition products	Oxides of phosphorus evolved in fire.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Product	Test Results
FLOGARD MS6209 (CoolGard IN 112) (Mixture)	Acute Dermal LD50 Rabbit: > 2000 mg/kg (Calculated according to GHS additivity formula) Acute Oral LD50 Rat: 1025 mg/kg (Calculated according to GHS additivity formula)
Components	Test Results
Zinc bis(dihydrogen phosphate) (13598-37-3)	Acute Dermal LD50 Rabbit: > 2000 mg/kg



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Components	Test Results
Phosphoric acid (7664-38-2)	Acute Oral LD50 Rat: 1260 mg/kg Acute Dermal LD50 Rabbit: 2740 mg/kg Acute Oral LD50 Rat: 300 mg/kg
Acute toxicity	Harmful if swallowed.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Information on likely routes of exposure	
Ingestion	May cause irritation of the gastrointestinal tract. Harmful if swallowed.
Inhalation	Prolonged or excessive inhalation may cause respiratory tract irritation.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye irritation.
Symptoms	Not available.
Aspiration hazard	Based on available data, the classification criteria are not met.
Mixture versus substance information	None known.
Other information	Not available.

SECTION 12: Ecological information

12.1. Toxicity

Product	Species	Test Results	
FLOGARD MS6209 (CoolGard IN 112) (CAS Mixture)			
Aquatic			
Crustacea	IC25	Ceriodaphnia	1,9 mg/l, Static Renewal Bioassay, 7 day
	LC50	Ceriodaphnia	1,5 mg/l, Static Renewal Bioassay, 48 hour
		Daphnia magna	12 mg/l, Static Renewal Bioassay, 48 hour
	NOEL	Ceriodaphnia	0,63 mg/l, Static Renewal Bioassay, 48 hour
Fish		Daphnia magna	0,31 mg/l, Static Renewal Bioassay, 7 day
	IC25	Fathead minnow	1,5 mg/l, Static Renewal Bioassay, 48 hour
	LC50	Fathead minnow	5 mg/l, Static Renewal Bioassay, 7 day
			14 mg/l, Static Renewal Bioassay, 96 hour



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Product	Species	Test Results
	Rainbow trout	4,9 mg/l, Static Renewal Bioassay, 96 hour
NOEL	Fathead minnow	2,5 mg/l, Static Renewal Bioassay, 96 hour
	Rainbow trout	1,6 mg/l, Static Renewal Bioassay, 96 hour

12.2. Persistence and degradability

This product, being inorganic and in its highest oxidation state, has no COD,BOD or TOC.

12.3. Bioaccumulative potential Not available.

Partition coefficient n-octanol/water (log Kow) Not available.

Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil Not available.

12.5. Results of PBT and vPvB assessment Not a PBT or vPvB substance or mixture.

12.6. Other adverse effects Heavy metals: Zn = 120 mg/g (calculated data)

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Contaminated packaging According to Hazardous Waste Regulations.

EWC (European Waste Code) recommendation : 15 01 10
15 Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified.
15 01 Packaging (including separately collected municipal packaging waste).
15 01 10 Packaging containing residues of or contaminated by dangerous substances.
Depending on the origin and state of the waste, other EWC numbers may be applicable too.

Disposal methods/information According to Hazardous Waste Regulations.

EWC (European Waste Code) recommendation : 16 03 03
16 Wastes not otherwise specified in the list.
16 03 Off-specification batches and unused products.
16 03 03 Inorganic wastes containing dangerous substances.
Depending on the origin and state of the waste, other EWC numbers may be applicable too.

SECTION 14: Transport information

ADR

- 14.1. UN number UN1805
- 14.2. UN proper shipping name PHOSPHORIC ACID, SOLUTION (Zinc bis(dihydrogen phosphate, mixture)
- 14.3. Transport hazard class(es)
 - Class 8
 - Subsidiary risk -
 - Tunnel restriction code (E)
- 14.4. Packing group III
- 14.5. Environmental hazards Yes
- 14.6. Special precautions for user Not available.

RID

- 14.1. UN number UN1805
- 14.2. UN proper shipping name PHOSPHORIC ACID, SOLUTION (Zinc bis(dihydrogen phosphate, mixture)
- 14.3. Transport hazard class(es)
 - Class 8
 - Subsidiary risk -



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14.4. Packing group III
14.5. Environmental hazards Yes
14.6. Special precautions for user Not available.

ADN

14.1. UN number UN1805
14.2. UN proper shipping name PHOSPHORIC ACID, SOLUTION (Zinc bis(dihydrogen phosphate, mixture)
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
14.4. Packing group III
14.5. Environmental hazards Yes
14.6. Special precautions for user Not available.

IATA

14.1. UN number UN1805
14.2. UN proper shipping name PHOSPHORIC ACID, SOLUTION (Zinc bis(dihydrogen phosphate, mixture)
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
14.4. Packing group III
14.5. Environmental hazards Yes
ERG Code Not available.
14.6. Special precautions for user Not available.

IMDG

14.1. UN number UN1805
14.2. UN proper shipping name PHOSPHORIC ACID, SOLUTION (Zinc bis(dihydrogen phosphate, mixture)
14.3. Transport hazard class(es)
Class 8
Subsidiary risk -
14.4. Packing group III
14.5. Environmental hazards
Marine pollutant Yes
EmS F-A, S-B
14.6. Special precautions for user Not available.
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code This substance/mixture is not intended to be transported in bulk.

ADN; ADR; IATA; IMDG; RID



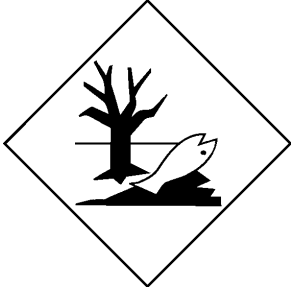


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Marine pollutant



SECTION 15: Regulatory information

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

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Zinc bis(dihydrogen phosphate) (CAS 13598-37-3)

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

National regulations

Not available.

15.2. Chemical safety assessment

Not available.

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

Registration No. – 140901

Category Code(s):

G5 Cooling and retort water treatment products

G7 Boiler, steam line treatment products – nonfood contact

Inventory status

Country(s) or region

Europe

Inventory name

European Inventory of Existing Commercial Chemical Substances (EINECS)

On inventory (yes/no)*

Yes



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Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European List of Notified Chemical Substances (ELINCS)	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: Other information

List of abbreviations

COD: Chemical Oxygen Demand
 EC-No: European Commission Number
 IATA: International Air Transport Association
 IMDG Code: International Maritime Dangerous Goods Code.
 CAS: Chemical Abstract Service.
 CLP: Classification, Labeling and Packaging REGULATION (EC) No 1272/2008 on classification, labeling and packaging of substances and mixtures.
 CEN: European Committee for Standardization (Comité Européen de Normalisation).
 TWA: Time Weighted Average.
 STEL: Short-term Exposure Limit.
 LD50: Lethal Dose 50%.
 LC50: Lethal Concentration 50%.
 EC50: Effective Concentration 50%.
 NOEL: No observed effect level.
 BOD: Biochemical oxygen demand.
 TOC: Total Organic Carbon.
 ADR: European agreement concerning the international carriage of dangerous goods by road (Accord européen relatif transport des marchandises dangereuses par route).
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures).
 RID: Regulations concerning the international carriage of dangerous goods by rail (Règlement International concernant le transport de marchandises dangereuses par chemin de fer).
 Safety data sheets of raw materials.

References

Information on evaluation method leading to the classification of mixture

The physical, health and environmental hazards of this mixture are assessed by applying the classification criteria for each hazard class or differentiation in Parts 2 to 5 of Annex I to Regulation (EC) No 1272/2008 (CLP).

Full text of any H-statements not written out in full under Sections 2 to 15

H290 May be corrosive to metals.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H400 Very toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.

Revision information

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

Training information

Provide training on safe handling while considering the type of application and exposure scenarios.

Based on EC Directive / Regulations

(EC) No 1907/2006 (REACH)
 (EC) No 1272/2008
 (EU) 2015/830
 (EU) No 1357/2014

Further information

Correction in Section: 2,8