

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation (EU) No. 453/2010 - United Kingdom (UK)

SAFETY DATA SHEET R-Phos 615

1.1 Product identifier Product name : R-Phos 615 **Product type :** Liquid.

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

1.3 Details of the supplier of the safety data sheet .

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

Identified uses

Cleaning/treating metal surfaces. [For industrial use only]

BLASTWASHUK

24 Baron Avenue, Earls Barton, Northampton NN6 0JE United Kingdom

1.4 Emergency telephone number

01604 811505 9-5pm 07725 819653 (24hrs)

2.1 Classification of the substance or mixture Product definition : Mixture **Classification according to Directive 1999/45/EC [DPD]**

The product is classified as dangerous according to Directive 1999/45/EC and its amendments.

SECTION 2: Hazards identification

Classification :

Human health hazards : **Environmental hazards :**

Xn; R20/21/22 Xi; R36 R52/53

Harmful by inhalation, in contact with skin and if swallowed. Irritating to eyes.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

See Section 16 for the full text of the R phrases or H statements declared above. See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements Hazard symbol or symbols :



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SECTION 2: Hazards identification

Indication of danger	: Harmful
Risk phrases	: R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R36- Irritating to eyes. R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrases	: S36/37- Wear suitable protective clothing and gloves.
Hazardous ingredients	: hydrofluoric acid
Supplemental label elements	: Contains sodium 3-nitrobenzenesulphonate. May produce an allergic reaction.
Special packaging requirements	
Containers to be fitted with child-resistant fastenings	: Not applicable.
Tactile warning of danger	: Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	: Defatting to the skin.
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SECTION 3: Composition/information on ingredients

Substance/mixture : Mixture

Product/ingredient name	Identifiers	%	Classification		Type
			67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	
sodium chlorate	EC: 231-887-4 CAS: 7775-09-9 Index: 017-005-00-9	3-7	O; R9 Xn; R22 N; R51/53	Ox. Sol. 1, H271 Acute Tox. 4, H302 Aquatic Chronic 2, H411	[1]
potassium salt of aryl ether phosphate ester (surfactant H3P13)	CAS: 72283-31-9	1-5	Xi; R36/38	Skin Irrit. 2, H315 Eye Irrit. 2, H319	[1]
fatty alcohol alkoxyolate (surfactant H3P9)	-	0.1-1	Xi; R38 N; R50	Skin Irrit. 2, H315 Aquatic Acute 1, H400	[1]
hydrofluoric acid	EC: 231-634-8 CAS: 7664-39-3 Index: 009-003-00-1	0.1-1	T+; R26/27/28 C; R35	Acute Tox. 2, H300 Acute Tox. 1, H310 Acute Tox. 2, H330 Skin Corr. 1A, H314 Eye Dam. 1, H318	[1] [2]
ammonium fluoride	EC: 235-185-9 CAS: 12125-01-8 Index: 009-006-00-8	0.1-1	T; R23/24/25	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331	[1] [2]
			See Section 16 for the full text of the R-phrases declared above.	See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

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SECTION 3: Composition/information on ingredients

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII

[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. The concentration of hydrofluoric acid in this product is low but if a large quantity has been ingested, give 6 effervescent tablets of calcium gluconate in water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : Irritating to eyes.
- Inhalation** : Harmful by inhalation.
- Skin contact** : Harmful in contact with skin. May cause skin sensitisation.
- Ingestion** : Harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

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SECTION 4: First aid measures

Ingestion : Adverse symptoms may include the following:
irritation
nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment. As the concentration of fluoride in this product is very low, burns requiring special antidote treatment are unlikely to occur.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. The product contains an oxidising agent that may aid combustion if it dries out. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
halogenated compounds
metal oxide/oxides

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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SECTION 6: Accidental release measures

6.2 Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. The spilt material may be neutralised with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : Cleaning/treating metal surfaces.

Industrial sector specific solutions : Not available.

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SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
hydrofluoric acid	EH40/2005 WELs (United Kingdom (UK), 8/2007). STEL: 2.5 mg/m ³ , (as F) 15 minute(s). STEL: 3 ppm, (as F) 15 minute(s). TWA: 1.5 mg/m ³ , (as F) 8 hour(s). TWA: 1.8 ppm, (as F) 8 hour(s).
ammonium fluoride	EH40/2005 WELs (United Kingdom (UK), 8/2007). TWA: 2.5 mg/m ³ , (as F) 8 hour(s).

Recommended monitoring procedures : As this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy), European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents), European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Derived no effect levels

No DNELs available.

Predicted no effect concentrations

No PNECs available.

8.2 Exposure controls

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Eyewear should comply with European Standard EN166.
If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The most suitable glove should be chosen based on the risk assessment and information on breakthrough time from the glove supplier/manufacturer. In most cases, a breakthrough time of greater than 4 hours would be recommended. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of

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SECTION 8: Exposure controls/personal protection

mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. To protect hands from chemicals, gloves should comply with European Standard EN374.

Recommended: PVC or rubber gloves.

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Recommended: Leather boots.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure all respiratory equipment is suitable for its intended use and is 'CE'-marked. Disposable filtering half mask respirators should comply with European Standard EN149 or EN405. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Gas and combination filter cartridges should comply with European Standard EN14387.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Clear. Light yellow.
- Odour** : Slight 'surfactant'.
- Odour threshold** : Not available.
- pH** : 4.5
- Melting point/freezing point** : <-10°C
- Initial boiling point and boiling range** : 103°C
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not applicable.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Upper/lower flammability or explosive limits** : Not applicable.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1.3
- Solubility(ies)** : Completely miscible with water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not applicable.

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SECTION 9: Physical and chemical properties

- Decomposition temperature** : Not available.
Viscosity : Not available.
Explosive properties : Not applicable.
Oxidising properties : The product contains 3 - 7% of a strong oxidising agent.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability : The product is stable.
10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid : Avoid allowing the product to dry out in contact with combustible materials and clothing.
10.5 Incompatible materials : Reactive or incompatible with the following materials:
 alkalis
 reducing materials
10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sodium chlorate	LD50 Oral	Rat	1200 mg/kg	-
hydrofluoric acid	LC50 Inhalation Gas.	Rat	1276 ppm	1 hours
	LC50 Inhalation Vapour	Rat	1100 mg/m3	60 minutes

Conclusion/Summary : Not available.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
hydrofluoric acid	Eyes - Severe irritant	Human	-	50 milligrams	-
	Skin - Severe irritant	Rat	-	3 minutes 50 Percent	-

Conclusion/Summary : Not available.

Sensitisation

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

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SECTION 11: Toxicological information

Teratogenicity

Conclusion/Summary : Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Irritating to eyes.
Inhalation : Harmful by inhalation.
Skin contact : Harmful in contact with skin. May cause skin sensitisation.
Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness
dryness
cracking

Ingestion : Adverse symptoms may include the following:
irritation
nausea or vomiting

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : Once sensitised, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Other information : Not available.

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SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
sodium chlorate	Acute EC50 298 mg/L Fresh water	Algae - Phaeodactylum tricorutum - Exponential growth phase	72 hours
	Acute LC50 3100000 ug/L Fresh water	Crustaceans - Asellus hilgendorfi - 1 to 5 mg	48 hours
	Acute LC50 3162 mg/L Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1100000 ug/L Fresh water	Fish - Oncorhynchus masou - Fingerling - 6.9 cm - 3 g	96 hours

Conclusion/Summary : Not available.

12.2 Persistence and degradability

Conclusion/Summary : The surfactants contained in this mixture comply with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents.

12.3 Bioaccumulative potential

Not available.

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

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SECTION 14: Transport information

	ADR/RID	ADN/ADNR	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user	Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	Transport within user's premises: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Additional information	-	-	-	-

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

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : Not determined.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

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SECTION 15: Regulatory information

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

International regulations

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4, H302
 Acute Tox. 4, H312
 Eye Irrit. 2, H319
 Aquatic Chronic 3, H412

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H312	Calculation method
Eye Irrit. 2, H319	Calculation method
Aquatic Chronic 3, H412	Calculation method

Full text of abbreviated H statements : H271 May cause fire or explosion; strong oxidiser.
 H300 Fatal if swallowed.
 H301 Toxic if swallowed.
 H302 Harmful if swallowed.
 H310 Fatal in contact with skin.
 H311 Toxic in contact with skin.
 H312 Harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H319 Causes serious eye irritation.
 H330 Fatal if inhaled.
 H331 Toxic if inhaled.
 H400 Very toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.

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SECTION 16: Other information

	H412	Harmful to aquatic life with long lasting effects.
Full text of classifications [CLP/GHS]	: Acute Tox. 1, H310	ACUTE TOXICITY: SKIN - Category 1
	Acute Tox. 2, H300	ACUTE TOXICITY: ORAL - Category 2
	Acute Tox. 2, H330	ACUTE TOXICITY: INHALATION - Category 2
	Acute Tox. 3, H301	ACUTE TOXICITY: ORAL - Category 3
	Acute Tox. 3, H311	ACUTE TOXICITY: SKIN - Category 3
	Acute Tox. 3, H331	ACUTE TOXICITY: INHALATION - Category 3
	Acute Tox. 4, H302	ACUTE TOXICITY: ORAL - Category 4
	Acute Tox. 4, H312	ACUTE TOXICITY: SKIN - Category 4
	Aquatic Acute 1, H400	AQUATIC TOXICITY (ACUTE) - Category 1
	Aquatic Chronic 2, H411	AQUATIC TOXICITY (CHRONIC) - Category 2
	Aquatic Chronic 3, H412	AQUATIC TOXICITY (CHRONIC) - Category 3
	Eye Dam. 1, H318	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
	Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
	Ox. Sol. 1, H271	OXIDIZING SOLIDS - Category 1
	Skin Corr. 1A, H314	SKIN CORROSION/IRRITATION - Category 1A
	Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Full text of abbreviated R phrases	: R9- Explosive when mixed with combustible material.	
	R26/27/28- Very toxic by inhalation, in contact with skin and if swallowed.	
	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.	
	R22- Harmful if swallowed.	
	R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.	
	R35- Causes severe burns.	
	R36- Irritating to eyes.	
	R38- Irritating to skin.	
	R36/38- Irritating to eyes and skin.	
	R50- Very toxic to aquatic organisms.	
	R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
	R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.	
Full text of classifications [DSD/DPD]	: O - Oxidising	
	T+ - Very toxic	
	T - Toxic	
	C - Corrosive	
	Xn - Harmful	
	Xi - Irritant	
	N - Dangerous for the environment	
Date of printing	: 03/12/2012.	
Date of issue/ Date of revision	: 30/11/2012.	
Date of previous issue	: No previous validation.	
Version	: 1	

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.