Material Safety Data Sheet According to 1907/2006/EC - Article 31

	Uses: Restrictions: Details of the	ration No:	pH Minus Sodium Bi 016-046-0 7381-38-1 231-665-7 01-211955 s of the sub Swimming	, 52465-36-000 ostance or m	y Acid 03		
(Other Names: Index No: CAS No: EC No: Reach Regist Relevant Iden Jses: Restrictions: Details of the	ration No:	Sodium Bi 016-046-0 7381-38-1 231-665-7 01-211955 s of the sub Swimming	00-X 52465-36-000 ostance or m	03		
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1.2 1.3	Relevant Iden Uses: Restrictions: Details of the		s of the sub Swimming	ostance or m			
ו 1.3 ו	Uses: Restrictions: Details of the	tified uses	Swimming		ixture and uses		
ו 1.3 ו	Restrictions: Details of the		-	1 Pool water t		advised against	
1.3 I	Details of the		At this time	,	reatments		
			At this tim	e we do not h	nave information o	n use restrictions	
		supplier c	of the safet	v data sheet			
,	Company:		Pool Contro	-			
	Company:	Unit 2, Th					
		Stoke Orc					
		Bishops C					
		Glouceste					
		GL52 7RS	3				
-	Telephone:	+44 (0) 8	712 229081	i i			
	Fax:	• • •	712 229083				
	E-mail:	. ,	c-chemicals				
-			<u>c-criefficat</u>	<u>5.00.0R</u>			
	Emergency T	-					
-	Tel:	+44 (0) 87	′12 229081	(office hour	s)		
ard	Identification						
	Classification						
	Classification	according	g to Regula				
-	Hazard Class			Hazard Cat	egory Targe	et Organs	Hazard Statements
E	Eye Dam			1			H318
F	For the full tex	t of the H s	tatements r	nentioned in	this section see Se	ection 16.	
-							
	Classification	according	a to EU Dir	ectives 67/5	48/EEC or 1999/4	5/FC	
	Hazard Symb		-			5/20	
	-	Di/Calegoi	y or uange		Risk phrases		
I	rritant				R41		
F	For the full tex	t of the R p	hrases mer	ntioned in this	s section see Secti	ion 16.	
_							
	Most importa		effects				
	Human Health				11 for toxilogical		
	Dhusiaal 9 Ch	emical Haz	ards:	See sectior	9 for physicocher	mical information	
	Physical & Ch			•	12 for onvironme		
F	Potential envir		effects:	See sectior		ental information	
I	Potential envir	onmental e	effects:	See sectior		ental information	
ן ו 2.2 ו	Potential envir L abel elemen	onmental e ts				ental information	
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 2.2 	Potential envir L abel elemen L abelling acc Hazard symbo Signal word: Hazard statem	onmental e ts ording to I lls: nents:	Regulation Danger H318:	(EC) No 127	/2/2008	ental information	
 	Potential envir L abel elemen L abelling acc Hazard symbo Signal word: Hazard statem Precautionary	onmental e ts ording to I lls: hents: statements	Regulation Danger H318:	(EC) No 127 Causes ser	'2/2008 ious eye damage		ace protection
 	Potential envir L abel elemen L abelling acc Hazard symbo Signal word: Hazard statem	onmental e ts ording to I lls: nents:	Regulation Danger H318:	(EC) No 127 Causes ser	'2/2008 ious eye damage	g/eye protection/fa	ace protection
 	Potential envir L abel elemen L abelling acc Hazard symbo Signal word: Hazard statem Precautionary	onmental e ts ording to I lls: ents: statements P280:	Regulation Danger H318: Wear prote	(EC) No 127 Causes ser ective gloves	'2/2008 ious eye damage /protective clothing	g/eye protection/fa	ace protection al minutes. Remove conta

(continued on Page 2)

Trac	le N	lam	e:

2. Hazard Identification

Hazardous components which must be listed on the label

Not relevant

2.3 Other Hazards

Results of PBT and vPvB assessment not required (inorganic)

Chemical nature:	Granular				
Chemical Name		lden	tification Numbers	Amount	%
Sodium Hydrogen Sulfa	ite	CAS No: EC No:	016-046-00-X 7381-38-1 231-665-7 01-2119552465-36-0003	92%	Xi; 41 Eye Dam 1, H318

4.	1 Description of first aid	measures					
	General Advice:	Take off all contaminated clothing immediately.					
	If Inhaled:	In case of accident by inhalation; remove casualty to fresh air and keep at rest. Call a physician immediately					
	In case of skin contact:	Wash off immediately with plenty of soap & water. If irritation persists seek medical advice					
	In case of eye contact:	Rinse immediately with plenty of water, also under eyelids for at least 15 minutes. Remo contact lenses. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.					
	If swallowed:	Clean mouth with water and drink plenty of water. If swallowed, do not induce vomiting seek medical advice. If a person vomits when lying on his back place him in the recover position.					
	Additional Information:	First Aider needs to protect himself See also section 8 Never give anything by mouth to an unconscious person Show this safety data sheet to the doctor in attendance Treat symptomatically When symptoms persist or in all cases of doubt seek medical advice					
	Most important symptoms and effects, both acute and delayed						
	Inhalation:	May cause irritation of the respiratory tract. Inhalation may provoke the following symptoms: shortness of breath, cough, dry/sore throat					
	Skin contact	May be irritating. Skin contact may provoke the following symptoms; redness; pain.					
	Eye contact	Causes serious eye damage. Eye contact may provoke the following symptoms; rednes pain.					
	Ingestion	May cause irritation to mucous membranes. Ingestion may provoke the following symptoms: Abdominal pain, burning sensation					
	Indication of immediate	e medical attention and special treatment needed No further information available					

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ire fighting measures	
5.1 Extinguishing media: Suitable extinguishing media: Unsuitable extinguishing media:	Dry powder. CO2 High volume water jet
5.2 Special hazards arising from the Fire Hazard	e substance or mixture Non-flammable substance
Specific Hazards during fire:	Burning produces noxious and toxic fumes. Sox, NaOx Fire residues and contaminated fire extinguishing water must be disposed of accordance with local regulations. The pressure in sealed containers can increase under the influence of heat. Vapours may form explosive mixture with air Vapours are heavier than air and may spread along the floor.
5.3 Advice for fire-fighters Advice for fire-fighters	In the event of fire, wear self-contained breathing apparatus.

6. Accidental release Measures

b. Accidental	release Measures	
6.1 Pers	sonal precautions, protective ed	quipment and emergency procedures
Non	emergency personnel:	Evacuate personnel to safe areas. Use personal protective equipment. Keep people away from and upwind of spill/leak. Provide adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or spray mist. For personal protection see Section 8.
Eme	ergency responders:	Only qualified personnel equipped with suitable protective equipment may intervene.
	rironmental precautions ironmental precautions:	Prevent product from entering drains
6.3 Met	hods and materials for containr	nent and cleaning up
	hods and materials for tainment and cleaning up:	Prevent further leakage or spillage if safe to do so. Sweep up and shovel into suitable containers for disposal. Dispose of in accordance with local regulations. Local authorities should be advised if significant spillages cannot be contained.
6.4 Refe	erence to other sections	For personal protection see Section 8 For disposal considerations see Section 13

7. Handling and storage	
7.1 Precautions for safe handlin	g
Advice on safe handling:	Storage and handling must take place in conformity with national laws Avoid contact with mucous membranes, Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. If during handling the risk of contact with the product originates, ensure the presence of a shower and eyewash in the vicinity.
Hygiene measures:	Keep away from food, drink & animal feeding stuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of the day. Take off all contaminated clothing immediately. Provide adequate ventilation. Avoid contact with skin and eyes.
7.2 Conditions for safe storage,	including any incompatibilities.
Requirements for storage area containers:	As and Store in dry, cool, well-ventilated area. Keep containers away from wet floors. Regularly check for damage to packaging. Keep container tightly closed and dry. Keep away from open flames, hot surfaces and the sources of ignition.
7.3 Specific end uses	No information available

8.1	Control parameters Exposure Limits		No information available
	PNEC Water		
	Aqua (freshwater)		11,09 mg/l
	Aqua (marine water)		1,11 mg/l
			17,66 mg/l
	Sediment (freshwater)		40,2 mg/kg dwt
	Sediment (marine water)		40,2 mg/kg dwt
	PNEC (Soil)		
	PNEC soil		1,54 mg/kg dwt
	PNEC (STP)		
	Sewage treatment plant		800 mg/l
8.2	Exposure controls		
	Engineering measures	that eyewa bottles wit	dequate ventilation. Use only in area provided with exhaust ventilation. Ensu ash stations and safety showers are close to the workstation location. Eyew th pure water. Organisational measure to prevent/limit releases, dispersion See also Section 7.
	Personal protective equ	linmont	
Per	Personal protective equ	The type o	of protective equipment must be selected according to the concentration and the dangerous substance at the specific workplace.
Pers		The type of amount of In case of Respirator If there is	the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2.
Per	sonal protective equipmen	The type of amount of In case of Respirator If there is (EN138/20 Rubber gla and time of working sp physical re	i the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being us
Per	sonal protective equipmen	The type of amount of In case of Respirator If there is (EN138/26 Rubber gla and time of working sp physical re instruction	 the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being use equirements (protection against cutting/drilling, skill, thermal protection) and
Pers	sonal protective equipmen Respiratory protection Hand protection	The type of amount of In case of Respirator If there is (EN138/26 Rubber gli and time of working sp physical re instruction Tightly fitti	 the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being use equirements (protection against cutting/drilling, skill, thermal protection) and any specification of the supplier of gloves.
Per	sonal protective equipmen Respiratory protection Hand protection Eye protection	The type of amount of In case of Respirator If there is (EN138/20 Rubber gla and time of working sp physical re instruction Tightly fitti chemical-t	i the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being us equirements (protection against cutting/drilling, skill, thermal protection) and ins/specification of the supplier of gloves.
Pers	sonal protective equipmen Respiratory protection Hand protection Eye protection Skin and body protection Thermal Hazard protection	The type of amount of In case of Respirator If there is (EN138/26 Rubber gla and time of working sp physical re instruction Tightly fitti chemical-n Not requir	i the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being use equirements (protection against cutting/drilling, skill, thermal protection) and is/specification of the supplier of gloves. ing safety goggles (EN166) resistant overalls
Pers	sonal protective equipmen Respiratory protection Hand protection Eye protection Skin and body protection	The type of amount of In case of Respirator If there is (EN138/26 Rubber gla and time of working sp physical re instruction Tightly fitti chemical-n Not requir e controls	i the dangerous substance at the specific workplace. insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific application of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being us equirements (protection against cutting/drilling, skill, thermal protection) and is/specification of the supplier of gloves. ing safety goggles (EN166) resistant overalls
Per	sonal protective equipmen Respiratory protection Hand protection Eye protection Skin and body protection Thermal Hazard protection Environmental exposur	The type of amount of In case of Respirator If there is (EN138/20 Rubber gla and time of working sp physical re instruction Tightly fitti chemical-n Not requir e controls Do not flus	insufficient ventilation wear suitable respiratory equipment. r with full face mask (EN136). Recommended Filter type:ABEK/P2. a risk of oxygen deficiency use appropriate pressurised breathing protection 69 - EN137 - EN139). oves (EN374) - PVC. The selection of specific gloves for a specific applicate of use in a working area, should also take into account other factors on the pace, such as (but not limited to): other chemicals that are possibly being us equirements (protection against cutting/drilling, skill, thermal protection) and ins/specification of the supplier of gloves. ing safety goggles (EN166) resistant overalls red under normal use, use dedicated equipment.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form:	Crystals, granular
Colour:	White, light yellow
Odour:	none
Odour Threshold:	Currently we do not have any information from our supplier about this.
pH @ 20°C:	1.3
Melting point:	315°C
Boiling point:	not applicable
Flash point:	not applicable
Evaporation rate: Flammability (solid, gas) Upper explosion limit: Lower explosion limit: Vapour pressure: Relative vapour density:	not applicable not applicable not applicable not applicable 1,5 - 1,5 kg/l
Water solubility:	ca 1080 g/l 2 @ 25°C
Partition coeffcient:n-octanol/water:	-2,2 (KOWWIN
Ignition temperature:	Currently we do not have any information from our supplier about this.
Thermal decomposition:	460°C
Viscosity, kinematic:	Currently we do not have any information from our supplier about this.
Explosive properties:	not applicable
Oxidising properties:	not applicable
9.2 Other Information	No further information available

10. Stability and reactivity

10.1	Reactivity Reactivity	See also section 10.5
10.2	Chemical stability Stability	hygroscopic
10.3	Possibility of hazardous reactions Hazardous reactions:	Acidic aqueous solution. Gives off hydrogen by reaction with metals
10.4	Conditions to avoid Conditions to avoid	Avoid dust formation,, moisture and heat. See also Section 7
10.5	Incompatible materials	
	Materials to avoid	Hydrolyses in presence of : Water Acidic aqueous solution. Gives off hydrogen by reaction with metals. See also Section 7
10.6	Hazardous decomposition product	S
	Hazardous decomposition products:	Possible decomposition products are: Acidic aqueous solutions. Gives off hydrogen by reaction with metals. Vapours may form exposure mixture with air.

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Information	on toxilog	ical effects					
		Not Clas	sified (due to data which is conclusive although insufficient fo ation)				
Product:	Sodium hydrogensulp		hate	CAS No: 7681-38-1			
	LD50 LC50 ATE	Oral Inhalation Oral	Rat Rat	2140 mg/kg sulfuric acid >2400 mg/m ³ sodium sulphate 2490,000 mg/kg			
Skin corrosio	on/irritation:		Not Classified (due to data which is conclusive although insufficient for classification) pH: 1.3				
Serious eye	damage		Causes pH: 1.3	serious eye damage			
Respiratory	or skin sens	itisation	Not Classified (due to data which is conclusive although insufficient for classification) pH: 1.3				
Carcinogeni	ogenicity luctive toxicity		Not Classified (due to data which is conclusive although insufficient for classification) Not Classified (due to data which is conclusive although insufficient for classification)				
Reproductiv							
Specific targ exposure)	et Organ to	xicity (Single	 Not Classified (due to data which is conclusive although insufficient for classification) 				
Specific targ (repeated ex	target Organ toxicity d exposure)		Not Clas	sified (due to data which is conclusive although insufficient fo ation)			
Aspiration ha	azard		Not Clas	sified (due to data which is conclusive although insufficient fo			

Watery solution; same properties as H2SO4, Fine granules, crystals or powder. Fine substance that can cause the irritation of the airways with coughing and the contraction of the airways. In contact with the water the product forms sulphuric acid that can cause burns.

	water risk 1 (mild water pollutant) Toxic to species living in water		
Sodium hydrogensulp	hate	CAS No:	7681-38-1
LC50 96h EC50 48h	fish 7960 mg/l daphnia 1766 mg/l		
e and degradability			
and degradability	Hydrolysis in water		
ative potential			
tive potential	Low potential		
•	Low potential -2,2 (KOWWIN		(continued or

12.4 Mobility in soil	
Mobility	Very mobile in soil
12.5 Results of PBT and PvB ass	essment
PBT /vPvB	Results of PBT and vPvB assessment not required (inorganic)

13. Disposal Considerations

13.1 Waste treatment methods Product:	Disposal together with normal waste is not allowed. Handle with care. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services.
Contaminated packaging:	Dispose of in accordance with local regulations
European Waste Catalogue No:	Classified as hazardous waste according to European Union regulation. (06 03 03) Waste codes should be assigned by the user based on the application for which the product was used.

4.4. 	
14. Transport Information	
Not classified as dangerous in the	meaning of transport regulation
14.1 UN Number	Not applicable
14.2 UN proper shipping name	Sodium Hydrogen Sulfate
14.3 Transport hazard class(es)	Not applicable
14.4 Packaging Group	Not applicable
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	Not applicable

15. Regulatory information

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

15.1.1 EU- Regulations

ISR (UK) TSCA (US0; OK AICS (Australia): OK DSL (Canada): OK ENCS (Japan) OK ECL (Korea): OK PICCS (Philipines): OK

Authorisations/Restrictions on use: Not applicable

This product contains an ingredient according to the candidate list of Annex XIV of the Reach Regulation 1907/2006/EC: None

15.1.2 National Regulations

WGK

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15.2 Chemical Safety Assessment Chemical Safety Assessment

A chemical safety assessment has been caried out for this substance

16. Other information

Full text of R-phrases referred to under sections 2 and 3

R41 Risk of serious damage to eyes

Full text of H-statements referred to under sections 2 and 3 Eye Dam 1 H318 Causes serious eye damage

This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty or merchantability, or fitness for any particular use, or any other warranty, express or implied, with respect to this information, and we assume no liability resulting from use of this information Users should make their own investigations to determine the suitability of the information for their particular needs and uses.

Abbreviations and acronyms:

ADR: Accord europeen sur le transport des marchandises dangereuse par Route (European Agreement concerning the RID: Reglement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations International Maritime Code for Dangerous Goods IMDG: IATA: International Air Transport Association IATA-DGR Dangerous goods Regulations by the 'International Air Transport Association' (IATA) ICAO: International Civil Aviation Organization Globally Harmonized System of Classification and Labelling of Chemicals GHS: EINECS European Inventory of Existing Commercial Chemical Substances. CAS: Chemicals Abstracts Service (division of the Americal Chemical Society) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent WGK: Amendment Revision Date By Linda Brueford Created 1 18/01/07 Classification changed to C (Corrosive). GHS label elements added and other 2 12/10/11 Linda Brueford minor editorial amendments 04/10/11 Linda Brueford Updated to European requirements and other minor editorial amendments 3