1. PRODUCT IDENTIFICATION

PRODUCT IDENTIFCATION:	**Valve Regulated Lead-Acid (VRLA) Battery**	
CLASSIFICATION:	Battery, wet, non-Spillable electric storage Substance classification: UN 2800	
PRODUCT CODES: CatalougeNo	DSAS POWERPACK / Synonyms None	
PRODUCT DESCRIPTION	Power Pack utilizing 2 x Yuasa YUASA SLA 9amp/hr 12v Batteries	
USAGE / APPLICATIONS:	POWER PACK FOR DSAS SHIP SECURITY SYSTEM	
MANUFACTURER / SUPPLIER	**Exegon Ltd** Unit1-3 Poulsons Yard Poulsons Yard, Strattons Walk Melksham Wiltshire SN12 6JL	**Yuasa Battery Europe Ltd,** Unit 22, Rassau Industrial Estate, Ebbw Vale, NP23 5SD
Tel: **FAX:**	+44 (0) 1780765600 +44 (0) 1780765700	+44 (0)1495 354 000 +44 (0) 8708 500317
INFORMATION & EMERGENCY CONTACT:		
	Health, Safety & Environment Dept, Yuasa Battery (UK) Ltd.	
Tel:	(+44) 01495 354 071	

Identification Images

2. COMPOSITION / INFORMATION ON INGREDIENTS

Components	Risk Phrases[1]	Description	Approximate % By Wt. or Vol.	Symbol	CAS No.
Plate Grid	**R23 R25**	Lead Metallic lead, lead alloys	30 to 40	Pb	7439-92-1
		Calcium	< 0.1	Ca	7440-70-2
		Tin	< 2	Sn	7440-31-5
Active materials	**R23 R24 R25**	Lead Dioxide	35 to 45	$Pb.O_2$	1309-60-0
		Barium compound	< 1.5	Ba	7440-39-3
Battery Electrolyte	**R21 R22 R35 R36 R37 R38 R49**	Dilute Sulphuric Acid	10 to 20	$H_2.SO_4$	7664-93-9
Case Material		**Standard Grade, UL94:HB** • ABS (Acrylonitrile-Butadiene-Styrene Copolymer)	5 to 10		9003-56-9
Separator Material		Absorbent Glass Matt (AGM) Separator (100% Borosilicate Glass Microfibre)	2 to 5		
Inorganic lead and battery electrolyte (Dilute Sulphuric Acid) are the main components of VRLA batteries.					

3. HAZARDS IDENTIFICATION

Components		
DSAS1 POWERPACK	**Mechanical**	VRLA Batteries can be heavy. Correct manual handling techniques and/or mechanical lifting aides (e.g. Fork Lift Truck) must be used.
	Electrical	VRLA Batteries can contain large amounts of electrical energy which can give very high discharge currents and severe electrical shock if the terminals are short circuited.
	Chemical	• The VRLA Battery presents no chemical hazards during the normal operation provided the recommendations for handling, storage, transport and usage are observed. • VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. • If the battery is broken and the internal components exposed, hazards may exist which require careful attention.
Plate Grids and Active materials	• **Metallic lead, lead alloys and Lead inorganic compounds:** • Lead poisoning is usually caused by inhalation of minute particles of lead fume and dust, which are absorbed by the blood stream from the lungs and deposited in the bone marrow. • Lead is only slowly released from the bones and thus has an accumulative effect causing chronic poisoning. • TOXIC by ingestion or inhalation of dust, vapour or fume • May cause harm to the unborn child • Harmful by inhalation and if swallowed • Danger of cumulative effects	
Battery Electrolyte	Severe IRRITATION and DAMAGE to internal tissues if swallowed, IRRITATION of eyes and skin and may cause BURNS and DERMATITIS.	
Case Material	Standard Grade, UL94:HB . No hazard in normal use. Material can burn in a fire with toxic smoke and decomposition products.	
Separator Material	The fibres may cause IRRITATION to skin or eyes upon exposure, and to internal tissues if inhaled or swallowed	

[1] See heading 16 for full text of each Risk phrase.

4. FIRST AID MEASURES FOR ACUTE EXPOSURE

This information is of relevance only if the VRLA Battery has suffered damage, is broken and persons have direct contact with the internal components.

Components		Action
Plate Grids and Active materials	Inhalation:	Remove the person from exposure to fresh air. Seek advice from a medical doctor
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. Seek advice from a medical doctor
	Skin Contact:	Wash off with plenty of water and soap to prevent accidental ingestion or inhalation
	Eye Contact:	Immediately irrigate with eyewash solution or clean water, holding the eyelids apart for at least 10 minutes. Then take the person to hospital.
Battery Electrolyte		**SPEED IS ESSENTIAL. OBTAIN IMMEDIATE MEDICAL ATTENTION.**
	Inhalation:	Remove the person from exposure to fresh air. If the person continues to feel unwell seek advice from a medical doctor.
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
	Skin Contact:	Drench with large quantities of water. Remove contaminated clothing. Continue to wash the affected area for at least 10 minutes. Seek advice from a medical doctor
	Eye Contact:	**SPEED IS ESSENTIAL. OBTAIN IMMEDIATE MEDICAL ATTENTION..** Immediately irrigate with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Then take the person to hospital.
Case Material	Inhalation:	Material can burn in a fire with toxic smoke and decomposition products. Upon inhalation of decomposition products, keep patient calm, remove to fresh air, and seek advice from a medical doctor. If a large quantity is inhaled take the person to hospital. **Note to physician**: Treat according to symptoms (decontamination, vital functions), no known specific antidote.
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
	Skin Contact:	Areas affected by molten material should be quickly placed under cold running water and a sterile protective dressing applied. Seek advice from a medical doctor.
	Eye Contact:	May cause irritation or injury due to mechanical action and traces of Battery Electrolyte. Irrigate thoroughly with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Then take the person to hospital.
Separator Material	Inhalation:	Remove patient from exposure to fresh air. If irritation persists, seek advice from a medical doctor
	Ingestion	Wash out mouth with water and give plenty of water to drink. Do not induce vomiting. If the person continues to feel unwell seek advice from a medical doctor.
	Skin Contact:	After contact with skin, wash immediately with plenty of soap and water. If irritation persists, seek advice from a medical doctor
	Eye Contact:	In case of contact with eyes, rinse immediately with eyewash solution or clean water, holding the eyelids apart, for at least 10 minutes. Then take the person to hospital.

5. FIRE-FIGHTING AND EXPLOSION HAZARD MEASURES

Components		
DSAS POWERPACK		• VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition. • Batteries in use will be part of an electrical circuit and must be isolated from the power source before attempting to put out a fire. Switch the power **OFF** before disconnecting the batteries from the power source. • Damaged batteries may expose negative plates (grey) colour, which may ignite if allowed to dry out. These plates may be wetted down with water after the battery has been removed from all electrical circuits.
	Suitable Extinguisher types:	CO_2; Foam; Dry Powder.
	Unsuitable Extinguisher types	Water extinguishers must never be used to put out an electrical fire.
	Hazardous decomposition products:	Carbon monoxide, Sulphur Dioxide, Sulphur Trioxide, lead fume and vapour, toxic fumes from decomposition of battery case materials.
	Special protective equipment for fire fighters:	Full face visor or safety goggles; respiratory protective equipment or self-contained breathing apparatus; full acid resistant protective clothing must be worn in fire fighting conditions.

6. ACCIDENTAL RELEASE MEASURES

This information is of relevance only if the VRLA Battery has suffered damage and is broken.

Components		
DSAS POWERPACK		VRLA batteries are designed not to leak under normal conditions.
Plate Grids and Active materials	Personal Precautions:	Use of heavy-duty gloves is recommended
	Clean-up Methods:	Solid lead may be picked up and recycled. Active material waste should be cleaned up and the area washed.
	Environmental Precautions:	Do not allow to enter a watercourse. Exposed lead materials must be placed in an inert sealed container (e.g. self-seal plastic bag) for disposal, see Section 13.
Battery Electrolyte:	Personal Precautions:	Ensure suitable, acid resistant, personal protective clothing (including respiratory protection) is worn during removal of spillages.
	Clean-up Methods: Small spillages:	Absorb spillages. Wash the spillage area with water.
	Large spillages:	Electrolyte leakage should be absorbed onto dry sand, earth, sawdust or other inert material and must not be allowed to enter any drains or sewage system. Neutralise the electrolyte using soda ash, sodium bicarbonate, sodium carbonate or calcium carbonate powder and then wash the area thoroughly with water. Collect absorbed material and place in an inert sealed container (e.g. self-seal plastic bag) for disposal, see Section 13.
Case Material:	Clean-up Methods:	Sweep and/or shovel up. Collect contaminated material and place in an inert sealed container for disposal, see Section 13.
Separator Material:	Clean-up Methods:	Sweep and/or shovel up. Collect contaminated material and place in an inert sealed container for disposal, see Section 13.

Note: If appropriate refer to 8 and 13

7. HANDLING AND STORAGE

Components		
DSAS POWERPACK	Storage	Store batteries in a cool, well ventilated area with a solid, impervious surface, and adequate containment in the event of accidental acid spillage.
		Store under a roof and protect against adverse weather conditions including rain, snow and other sources of water.
		Storage of large quantities of VRLA batteries may require approval from local environmental protection agency and/or local water authorities.
		Pallets of VRLA Batteries are heavy. Store at ground level or in lower levels of storage systems (e.g. racking).
		Take special care in dry conditions to avoid the risk of electrostatic discharges.
		Protect against physical damage and exposure to organic solvents and other incompatible materials.
		Store batteries in their original packaging wherever possible. When batteries are removed from their original packaging (e.g. for transportation of small quantities), ensure new packaging protects the batteries from damage and risk of short circuit of the terminals.

	Handling:	Only trained operators should be allowed to handle VRLA batteries.
		Mechanical lifting aides (e.g. FLT) may be required to move large batteries.
	End-of-Life (EC WEEE Regulations)	Ensure batteries are removed from equipment at end of life and collected for recycling by an approved contractor.
	Installation:	Refer to EN 50272-2:2001, Safety requirements for secondary batteries and battery installations – Part 2 Stationary batteries.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Components		
DSAS POWERPACK	Personal Precautions:	When there is no evidence of damage or visible traces of liquid (electrolyte) or solid deposits on the batteries they may be handled safely without extra personal protective equipment. Ensure electrical insulation equipment is used when installing batteries. (e.g. insulated mats and covers; insulated tools) Remove ALL metallic objects from the person when working with VRLA Batteries: e.g. Jewellery (rings, watches, bracelets, necklaces), pens, torches, etc. Where there are any signs of damage or liquid (electrolyte) or solid deposits, rubber gloves and acid resistant clothing must be worn when handling the batteries and affected packaging to protect against the effects of any electrolyte that may be present. If it is suspected that free electrolyte is present, then safety glasses must be worn, and if large amounts are present, chemical goggles or face shield should be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

Components				
DSAS POWERPACK	• The main components are listed in item 2 above. • Each unit contains three batteries contained in steel housing • The undamaged product is a manufactured item in an inert plastic (ABS) case, which will burn if subjected to high temperatures or sources of ignition. Some battery types are made with Flame Retardant ABS cases, see technical specification. These batteries carry the suffix 'FR' after the battery type; e.g. NP24-12FR • Batteries emit hydrogen gas, which is highly flammable and forms explosive mixtures in air, see Section 5.			
Plate Grids and Active materials	Appearance		Safety-related data	
	Form	Solid	*Solidification point*	327 ℃
	Colour	Grey or brown	*Boiling point*	1740 ℃
	Odour	Odourless	*Solubility in water*	Very low (0.15mg/l)
			Solubility in acid or alkaline solutions	Yes, dependant on the strength of solution.
			Density (at 20℃)	11.35 g/cm^3
			Vapour pressure (at 20℃)	N.A.
Battery Electrolyte:				
	Form	Liquid	*Solidification point*	-35 to -60 ℃
	Colour	Colourless	*Boiling point*	Approx 108 to 114 ℃
	Odour	Odourless	*Solubility in water*	Complete
			Density (at 20℃)	Variable up to 1.350 g/cm^3
			Vapour pressure (at 20℃)	N.A.
Case Material:	Appearance		Safety-related data	
	Form	Solid	*Softening point*	> 100 ℃ (DIN 53460)
	Colour	Grey or black	*Flash Point*	>330 ℃
	Odour	Slight Odour	*Solubility in water*	Insoluble
			Solubility in other solvents	Soluble in polar solvents, aromatic solvents, chlorinated hydrocarbons.
			Density (at 20℃)	1.07-1.4 g/cm^3 (DIN 53479)
			Vapour pressure (at 973℃)	1mm Hg
Separator Material:				
	Form	Fibrous material	*Solidification point*	N/A
	Colour	White	*Boiling point*	N/A
	Odour	Odourless	*Solubility in water*	Insoluble
			Density (at 20℃)	N/A
			Vapour pressure (at 20℃)	N/A

10. STABILITY AND REACTIVITY

Components		
DSAS POWERPACK		Within the operational temperature range -20 to +50 ℃ the undamaged product is stable.
Plate Grids and Active materials:	Materials to Avoid:	Powdered lead reacts violently with fused ammonium nitrate and sodium acetylide. Reacts violently when in contact with chlorine trifluoride.
Battery Electrolyte:	Hazardous Reactions	• Dilution of the higher concentrated grades with water may liberate excessive heat. • Highly reactive with metals and organic materials. • On contact with metals, may generate hydrogen which forms explosive mixtures with air. • Destroys organic materials such as cardboard, wood, textiles, etc. • Vigorous reaction with sodium hydroxide and alkalis.
	Hazardous Decomposition Product(s):	Sulphur oxides
Case Material:	Conditions to Avoid: Materials to Avoid: Thermal degradation products:	To avoid thermal decomposition, do not overheat. Starts to decompose at temperatures >275'C. Powerful oxidising agents. Monomers, other degradation products, traces of hydrogen cyanide.
Separator Material:		• Stable material. • Incompatible with Hydrofluoric acid and concentrated Sodium Hydroxide. • No hazardous polymerisation expected.

11. TOXICOLOGICAL INFORMATION

Components		
DSAS POWERPACK		This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment. Exposure limits may vary according to national law and regulations.
Plate Grids: Metallic lead, lead alloys.	Toxicity 	• Toxic by ingestion or inhalation • Chronic poison • Lead is a poison that affects virtually every system in the body • Symptoms include fatigue, headaches, constipation, aching bones and muscles, gastrointestinal tract disturbances and reduced appetite • Blood lead levels of 80 µg/dl and above have been associated with both acute and chronic effects of lead poisoning
Active materials: Lead dioxide.	Toxicity 	• Toxic by ingestion or inhalation • Chronic poison • Chronic exposure to lead compounds may lead to a build-up of lead in the body, giving rise to a variety of health problems, including anaemia, kidney and liver damage, impaired eyesight, memory loss and CNS[2] damage
Battery Electrolyte:	Dilute Sulphuric Acid  	Corrosive, the more concentrated solutions can cause serious burns to the mouth, eyes and skin Harmful by ingestion and through skin contact
	Inhalation:	Mist is a severe irritant to the respiratory tract. Fluid build up on the lung (pulmonary oedema) may occur up to 48 hours after exposure and could prove fatal
	Ingestion:  	Will immediately cause severe corrosion of and damage to the gastrointestinal tract
	Skin Contact:  	Causes severe chemical burns
	Eye Contact:  	Risk of serious damage to eyes. Causes severe burns. May cause prolonged or permanent damage or even total loss of sight. Mist will cause irritation

[2] CNS = Central Nervous System

Case Material:		According to information available the product is not harmful to health provided it is correctly handled and processed according to the given recommendations.
Separator Material:		Based on animal implantation and epidemiologic studies glass microfibres are thought to have some limited carcinogenic potential and as such are designated as Group 2B materials (IARC, US). The material should be treated as a category 3 carcinogen (Europe). Limited evidence of carcinogenic effect.

12. ECOLOGICAL INFORMATION

Components		
DSAS POWERPACK		This information does not apply to the undamaged VRLA Battery. It is of relevance if the battery is broken and the components are released to the environment.
Plate Grids and Active materials:	Metallic lead, lead alloys and Lead dioxide.	Chemical and physical treatment is required for the elimination of lead from water. Waste water containing lead must not be disposed of in an untreated condition.
	Ecotoxicity:  Risk Phrase R52/53	• The general classification for Lead compounds, R50/53 does not apply to Battery Lead Oxide • Tests in 2001 and 2005 have concluded that Battery Lead Oxide is NOT toxic for the environment; neither R50 nor R50/53 nor R51/53. • Risk Phrase R52/53 (Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment) applies to Battery Lead Oxide.
	Effect in the aquatic environment:   	• Toxicity for fish: 96 h LC 50 > 100 mg/l • Toxicity for daphnia: 48 h EC 50 > 100 mg/l • Toxicity for alga: 72 h IC 50 > 10 mg/l
Battery Electrolyte:	Ecotoxicity:   	• In order to avoid damage to the sewerage system, the acid has to be neutralised by means of soda ash, sodium bicarbonate or sodium carbonate before disposal. • Ecological damage is possible by change of pH. The electrolyte solution reacts with water and organic substances, causing damage to flora and fauna. • The electrolyte may also contain components of lead that can be toxic to aquatic environments.
	Persistence and Degradation:	Remains indefinitely in the environment as sulphate.
Case Material:	Elimination information:	No data available: insoluble in water
	Behaviour and environmental fate:	Due to the consistency of the product, and its insolubility in water, it will apparently not be bio-available.
Separator Material:		No data available: insoluble in water Not thought to pose any risk to the environment.

13. DISPOSAL CONSIDERATIONS

Components		
DSAS POWERPACK	Europe:	• Spent VRLA Batteries are subject to the requirements of the Batteries Directive 2006/66/EC (on batteries and accumulators and waste batteries and accumulators). Spent VRLA Batteries MUST be sent for recycling through an authorised contractor. • The WEEE Directive 2002/96/EC (Waste Electrical and Electronic Equipment) applies. Spent VRLA Batteries MUST be removed from equipment at end-of-life.
	Worldwide:	• VRLA batteries contain inorganic lead compounds and sulphuric acid which are damaging to the environment. • Spent batteries must be disposed of in an environmentally friendly manner in accordance with local national laws and regulations.
Plate Grids and Active materials:		• Metallic lead and active materials (Lead Oxides) must be recycled. • Disposal must be carried out in accordance with the European Hazardous Waste Directive 91/689/EEC (until end of 2010), then Directive 2008/98/EC
Battery Electrolyte:	Europe	• Disposal must be carried out in accordance with the European Hazardous Waste Directive 91/689/EEC (until end of 2010), • Thereafter, Directive 2008/98/EC on the protection of the environment through criminal law
	Worldwide	• Disposal should be in accordance with local, state or national legislation.

Case Material:		• Do not dispose of this product into sewers, any ocean or water area in order to prevent marine animals and birds from ingesting. • Recycling is encouraged. • Disposal by controlled incineration or source landfill in accordance with local national laws and regulations may be acceptable.
Separator Material:		• Constitutes a special waste by virtue of hazardous substance content. • Dispose of via approved landfill site. Disposal by controlled source landfill in accordance with local national laws and regulations may be acceptable.

14. TRANSPORT INFORMATION

Components		
VRLA Battery	Land Transport	Land Transport (ADR / RID) • UN N°: UN2800 • Classification ADR / RID: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Packing Group ADR: not assigned • Label Required: Corrosive • ADR / RID: New and spent batteries are exempt from all ADR / RID (special provision 598)
	Sea Transport	Sea transport (IMDG Code) • UN N°: UN2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Packing Group: III • EmS: F-A, S-B • Label Required: Corrosive. Non-spillable batteries meet the Special Provision 238; they are exempt from all IMDG codes because the batteries' terminals are protected against short-circuit.
	Air Transport	Air Transport (IATA-DGR) • UN N°: 2800 • Classification: Class 8 • Proper Shipping Name: BATTERIES, WET, NON-SPILLABLE electric storage • Packing Group: III • Label Required: Corrosive • Special Provision A48: Packaging test are not considered necessary • Special Provision A67: Yuasa's VRLA batteries meet the requirements of Packing instruction 872 because, at a temperature of 55°C, electrolyte will not flow from a ruptured or cracked case. The battery does not contain any free, unabsorbed electrolyte. The battery has been prepared for transport so as to prevent: a. A short-circuit of the battery's terminals by packaging in a strong and sturdy carton box. b. The battery has been fitted with an insulating cover (made from ABS) which prevents contact with the terminals. c. Unintentional activation is thus prevented The words "NOT RESTRICTED" and the Special Provision (SP) number must be indicated on all shipping documents • Special Provision: A164: The battery has been prepared for transport so as to prevent: a. Short-circuit of the battery's terminals by packaging in a strong and sturdy carton box. b. The battery has been fitted with a cover (made from ABS) which prevents contact with the terminals c. Unintentional activation is thus prevented
	All methods of transport	Do not place VRLA batteries inside sealed enclosures. VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx 4% to 76%. This can be ignited by a spark at any voltage, naked flames or other sources of ignition.

15. REGULATORY INFORMATION

Components		
DSAS POWERPACK	Required Markings:	
		Crossed-out wheeled bin indicating "SEPARATE COLLECTION" for all batteries and accumulators. Not to be disposed of with general domestic, commercial or industrial waste. Ref: The Batteries Directive 2006/66/EC
	Pb	The **Pb** symbol indicates the heavy metal content of the battery and enables the lead-acid battery to be sorted for recycling. Ref: The Batteries Directive 2006/66/EC.
		The International Recycling Symbol, required by law in many countries world-wide to facilitate the identification of secondary batteries and accumulators for recycling. Ref: IEC 61429 : 1995, Marking of secondary cells and batteries with the International Recycling Symbol ISO 7000-1135.

16. OTHER INFORMATION

Components	
DSAS POWERPACK	• Only trained, competent personnel, who have received special instructions for the hazards and risks, should be allowed to handle DSAS POWERPACK. • Never short-circuit battery terminals, since sparks and arcs produced can injure personnel and are a fire and explosion hazard. • VRLA Batteries emit hydrogen gas which is highly flammable and will form explosive mixtures in air from approx 4% to 76%. Never install VLRA Batteries in a gas-tight enclosure, whether during storage, transport or usage. • Batteries must always be charged on a voltage-regulated charging system with adequate ventilation provided to avoid the build-up of ignitable gases and to promote good heat dissipation. • Do not charge VLRA Batteries above + 50 ºC, discharge or store above + 60 ºC. • Under extreme conditions of charging equipment malfunction and/or battery failure, high voltage and high temperature conditions may occur causing the evolution of Hydrogen Sulphide (H_2S) gas, which is toxic. If detected by its odour of rotten eggs (at extremely low concentrations), switch off the charging equipment, evacuate all personnel from the area and ventilate well. Seek advice before attempting to re-start charging. **GENERAL SAFETY** • DO NOT CHARGE IN A SEALED CONTAINER • DO NOT DISPOSE OF BATTERIES IN FIRE • DO NOT SHORT CIRCUIT • DO NOT CRUSH, PUNCTURE, OPEN, DISMANTLE OR OTHERWISE MECHANICALLY • INTERFERE WITH BATTERIES • DO NOT STORE AT TEMPERATURES IN EXCESS OF 60OC, THE OPTIMUM STORAGE • TEMPERATURE FOR MAXIMUM LIFE IS +10 Degrees Centigrade to +35 Degrees Centigrade

Risk Phrases		
	R21	Harmful in contact with skin
	R22	Harmful if swallowed
	R23	Toxic by inhalation
	R24	Toxic in contact with skin
	R25	Toxic if swallowed
	R35	Causes severe burns
	R36	Irritating to eyes
	R37	Irritating to respiratory system
	R38	Irritating to skin
	R49	May cause cancer by inhalation
	R52	Harmful to aquatic organisms
	R53	May cause long-term adverse effects in the aquatic environment