NCG/015

SAFETY DATA SHEET

1 Product and company identification.

PRODUCT NAME	:	POLYPHOSPHORIC ACID 116
Use	:	General chemical industry. Intermediate for the synthesis of organic chemicals. Catalysis. Treating the surfaces of metals. (For further information, refer to the product technical data sheet).
SUPPLIER	:	Seller:
Name	:	Rhodia Consumer Specialties Limited
Address	:	P.O. Box 9837 - Oldbury West Midlands, B69 4WD – UK
Telephone number	:	+44 (0)121 541 3736
Telefax number	:	+44 (0)121 541 3851.
MANUFACTURING SITE		
Factory	:	Rhodia Consumer Specialties Limited
Address	:	P.O. Box 80 – Oldbury West Midlands, B69 4LN – UK
Telephone number	:	+44 (0)121 552 6805
EMERGENCY TELEPHONE NUMBER	:	**00 44 121 552 6805 (UK: 0121 552 6805)**

2 Composition / information on ingredients

>> SUBSTANCE

Common chemical name	:	Polyphosphoric acid
Synonyms	:	Tetraphosphoric acid
Further data	:	EINECS N°: 232-417-0
CAS number	:	8017-16-1.

3 Hazards identification

MOST IMPORTANT HAZARDS

Adverse human health effects : Harmful if swallowed.

		Corrosive. Causes severe burns. Molten product: causes serious burns. Risk of serious damage to eyes. Extremely irritating to the digestive tract. Risk of burns. Repeated inhalation of aerosols may cause adverse effects on health
Further data	:	Risk of thermal burns on contact with molten product.
Environmental effects	:	If the product is not neutralised, it may have harmful effects on the aquatic environment.
Physical and chemical hazards		
- Further hazards	:	Reacts violently on contact with water. Risk of splashing. Hazardous reactions may occur on contact with many chemicals. (Refer to the list of incompatible materials section 10 "Stability-Reactivity"). Very corrosive to metals. Releases hydrogen which forms explosive mixtures in air.
Classification/Specific hazards	:	According to EC criteria, this substance is classified as : - CORROSIVE.

4 First-aid measures

Inhalation	:	Not specifically applicable. Vapours or aerosols : Move to the fresh air. Seek medical help.
Skin contact	:	Immediately rinse with plenty of water (for at least 15 minutes). Undress under the shower. Remove all contaminated clothing and footwear. In all cases call a doctor, even if there are no immediate symptoms.
Eye contact	:	IMMEDIATELY rinse with plenty of water for a prolonged period, (at least 15 minutes) whilst keeping the eyes wide open. Ask for urgent medical help even if there are no visible symptoms.
Ingestion	:	Rinse mouth out with water. If the person is fully conscious, make him/her drink plenty of water. NEVER give an unconscious person anything to drink. Call a doctor immediately, even if there are no immediate symptoms.
Protection of first-aiders	:	- gloves, boots. - glasses with side shields. - protective clothing.

5 Fire - fighting measures

Extinguishing media		
- Suitable	:	Preferably use: Carbon dioxide (CO2). Dry sand.
- Not suitable	:	Water. Foam.
Specific hazards	:	Non-combustible liquid. However, it may present a risk in the event of a fire. Corrosive vapours are released. Reacts violently on contact with water:
Specific fire fighting methods	:	Cool down the containers/equipment exposed to heat with a water spray. Do not dispose of fire-fighting water in the environment
Protection of fire-fighters	:	Complete protective clothing. Impermeable boots and protective equipment. Gloves made of insulating material. Self-contained breathing apparatus.
Further information	:	In the presence of water, forms corrosive solutions.

6 Accidental release measures

Personal precautions

: Avoid contact with skin and eyes. Do not breathe spray.
Do NOT attempt to take action WITHOUT suitable protective equipment.
If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire brigade).

Personal protective equipment:
- full impermeable protective clothing and equipment.
- full head protection.
- eye/face protection (safety glasses + visor).
- appropriate gloves. (Neoprene) (PVC)

For further information refer to section 8 "Exposure-controls/personal protection".

Only qualified personnel equipped with suitable protective equipment may intervene. Mark out the contaminated area with signs and prevent access to unauthorized personnel.
Stop the leak, and if possible, avoid any contact with skin and clothing.
Remove all incompatible materials: - alkalis and caustic products.
Recover the product as quickly as possible.

Environmental precautions : Contain the spilled material by bunding.
Prevent the product from spreading into the environment.
Avoid direct discharge into drains.

Methods for cleaning up		
- Prohibited	:	Do NOT put the spilled material back into the original container for re-use.
- Recovery	:	Recover as much of the product as possible. Transfer the product into a spare container: - suitably labelled. - acid-resistant.
- Neutralization	:	Neutralize non-recoverable product with : - sodium bicarbonate NEVER neutralize product whilst it is still inside packaging or in an emergency container. Only neutralize the substance spilled on the floor.
- Cleaning/Decontamination	:	Wash the floor with plenty of water.
- Disposal	:	Dispose of all contaminated materials in accordance with current regulations.

7 Handling and storage

HANDLING

Technical measures	:	Use in a closed system. Only use materials resistant to: - acids. Vapour extraction at source.
Measures	:	Avoid contact with water or humidity. Avoid the formation of mists in the atmosphere. Do not exceed the occupational exposure limits (OEL). Avoid any direct contact with the product. Do NOT handle without gloves.
Safe handling advice	:	Handle and use in accordance with good occupational hygiene and safety practice. When using : If the product has crystallized, carefully heat up the package (maximum temperature : 70 °C). Do not overheat the product. NEVER pour water onto this product. Do not mix with incompatible materials (See list section 10).

STORAGE

Technical measures	:	Take all necessary precautions to avoid the accidental release of the product outside, due to the rupture of containers or transfer systems. Ensure that there is a suitable retention system.
Storage conditions		

- Recommended	:	Keep: - the container tightly closed. - protected from humidity and bad weather conditions. - away from incompatible materials. - in a designated area. - at temperatures of between 5°C and 25°C. Store molten product: - at temperatures not exceeding 80°C.
- To be avoided	:	Store away from incompatible materials.
Incompatible products	:	Water, humidity. Alkalis and caustic products. Products which release harmful or toxic gas on contact with an acid. Metals. Refer to the detailed list of incompatible materials (section 10 "Stability/Reactivity").
Packaging	:	The product is packaged in suitable recyclable packaging. - Plastic drums. 0.25 m3 IBC : - Plastic container. Bulk product : - Stainless steel road-tanker. Bulk product : - Stainless steel container which can be reheated.
Packaging materials		
- Recommended	:	Plastic materials (polyethylene). 316L Stainless steel. For molten product: 316L Stainless steel.
- Not suitable	:	Common metals. Glass.
Further information	:	Very corrosive to metals. Hydrogen is released which forms an explosive mixture in air. Consult manufacturer or supplier for detailed advice about storage, handling, fitted equipment, maintenance and uses of this product

8 Exposure controls / personal protection

Engineering measures	:	Extraction to remove vapours at their source. Ensure good ventilation of the work station.
Control parameters		
Occupational exposure limits		
- Limits (France)	:	Phosphoric acid : VME: 1 mg/m3. VLE: 3 mg/m3.
- Limits (U.S.A./A.C.G.I.H.)	:	Phosphoric acid : TLV (TWA) : 1 mg/m3 . TLV (STEL) : 3 mg/m3 .

- Limits (UK)	:	Orthophosphoric acid OES: 1 mg/m3 (Long term exposure limit - 8h TWA reference period). OES: 2 mg/m3 (Short term exposure limit - 15 minute reference period). (Sk - can be absorbed through the skin).
Surveillance procedures	:	Monitor the atmosphere at regular intervals.
Personal protective equipment		
- Respiratory protection	:	If the ventilation is suitable, it is not essential to wear respiratory equipment. If mist is formed: Self-contained breathing apparatus.
- Hand protection	:	Acid-resistant protective gloves. (Neoprene) (PVC) Handling hot product: Protective gloves insulated against heat. Note: This will not provide chemical protection.
- Eye protection	:	Safety spectacles. Long face shield.
- Skin and body protection	:	Light overall made of PVC. PVC apron covering the tops of the boots. Helmet. Acid-resistant boots. Handling hot product: Heavy weight overall incorporating boots. Full head protection (hood).
Collective emergency equipment	:	Eye fountain. Safety shower.
Further information	:	The user is responsible for monitoring the working environment in accordance with local laws and regulations.

9 Physical and chemical properties

APPEARANCE		
- Physical state	:	Liquid.
- Form	:	extremely viscous.
- Colour	:	colourless to pale yellow.
Odour	:	none.
pH	:	< 2 (Aqueous solution - 1g/100ml).
Specific temperatures		
- Melting	:	< -50 °C. Super cooling is possible up to approximately 30°C.
- Boiling	:	550 °C.
Flammability characteristics		
- Flash point	:	Not applicable (non-flammable liquid).
Oxidizing properties	:	Not applicable
Explosion properties		

Explosive limits in air	:	Not applicable (non-flammable liquid).
Specific gravity	:	2060 kg/m3, at 25°C.
Solubility		
- in water	:	Miscible (in all proportions). Reacts.
- in organic solvents	:	Soluble in: - alcohols (Reacts).
Dynamic viscosity	:	60000 mPa.s at 25 °C. 1050 mPa.s at 100 °C.
Hygroscopicity	:	Very hygroscopic product.
Further information	:	Rapidly hydrolysed by water.

10 Stability and reactivity.

Stability	:	Very hygroscopic product. Avoid contact with water Hydrolyses at room temperature on contact with humidity.
Hazardous reactions		
- Conditions to avoid	:	Decomposes: - on contact with humidity.
- Materials to avoid	:	- bases. - products which release a dangerous gas when in an acid medium (chlorites, hypochlorites, sulphites, sulphides ...). Reacts with: - carbides. - chlorates. - cyanides. - nitrates. - phosphides. - silicides. with the release of toxic gas. Reacts suddenly with water, producing the corresponding acid.
- Hazardous decomposition products	:	At high temperatures releases: corrosive fumes. (Phosphorus oxides).
Further information	:	Attacks many metals releasing highly flammable gas (hydrogen) which generates fire or explosion hazards. Above 50°C, it attacks: glass. Above 80°C, it attacks: certain stainless steels. (316L) .

11 Toxicological information

Acute toxicity		
	:	LD50 dermal (Rabbit) 2740 mg/kg LD 50 oral: 1530 mg/kg (Rat) Harmful if swallowed.
Acute symptoms	:	Burns.
Local effects		
	:	(mist) Irritating to the respiratory system and mucous membranes. Causes serious burns. Risk of thermal burns

Risk of serious damage to eyes.
Causes serious injury to the digestive tract.

Repeated dose toxicity : Repeated inhalation of aerosols may cause adverse effects on health

12 Ecological information

MOBILITY
Expected behaviour of the product : Ultimate destination of the product : WATER.
DEGRADABILITY
Abiotic degradation
- Hydrolysis : Converted in the aquatic environment into: Phosphoric acid
BIODEGRADABILITY
Persistence : Substance is totally biotransformed (metabolized).
BIOACCUMULATION
Octanol/water partition coefficient : Not applicable
ECOTOXICITY
Effects on the aquatic environment : If the product is not neutralized, it may be toxic to aquatic organisms due to its acidity.

13 Disposal considerations

WASTE FROM RESIDUES
Prohibition : Do not allow the product to be released into the environment.
Discharging waste into rivers and drains is forbidden.
Destruction/Disposal : If recovery is not possible: Neutralize with sodium bicarbonate.
Dispose of at a licensed waste collection point.
Conform to current legislation, regulations and orders.

CONTAMINATED PACKAGING
Prohibition : Do not burn empty packaging.
Decontamination/cleaning : Drums: Completely empty the packaging prior to recycling.
Beware of residues or vapours which remain in the drums.
Bulk container: Close the container and without cleaning or decontamination, return it to the manufacturer.
Not applicable for tankers : dedicated use.
Non-returnable containers: Clean with hot water (approx. 60°C).
Neutralize contaminated cleaning water prior to disposal.
Destruction/Disposal : Drums: Recycle following cleaning or dispose of at an authorised site.

FURTHER INFORMATION	:	In accordance with RID/ADR regulations containers or tankers, which have not been cleaned or deodorized and which previously contained a hazardous product, must either be labelled or have hazard signs. In addition, they must be supplied with instructions on safety and protection on which the chemical identity of the product appears.
NOTE	:	The user's attention is drawn to the possible existence of local regulations regarding disposal.

14 Transport information

INTERNATIONAL REGULATIONS

Land

- Rail/road (RID/ADR)	:	Class:8. Packing group: III. Hazard identification number: 80. UN number: 3264. Labelling: 8.
Sea (IMO/IMDG)	:	Class: 8. Packing group: III. Description: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S (Polyphosphoric acid). UN Number: 3264. Labelling: 8. Marine pollutant: NO. Emergency schedule (EmS): F-A; S-B.
Air (ICAO-IATA)	:	Class: 8. Packing group: III. Description: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S (Polyphosphoric acid). UN number: 3264. Labelling: 8. Passenger aircraft: Packing instruction: 818 Quantity : 5 L. Cargo aircraft : Packing instruction: 820 Quantity : 60 L.

OTHER REGULATIONS

- United Kingdom: Rail/road	:	Substance identification number: 3264. Classification for conveyance: 8. Packing group: III. Emergency action code: 2X.
>>Further information	:	Empty containers which have not been cleaned are subject to the same transport regulations as those which are full.
NOTE	:	The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transport regulations for hazardous materials, it would be advisable to check their validity with your sales office.

15 Regulatory information

LABELLING

EC regulations	:	Mandatory labelling (self-classification) of hazardous substances: Applicable.
- Identification of the hazardous product	:	EC N°: Does not appear on the EC hazardous substances list (Annex 1 of the modified EC directive 67/548/EEC). EC No. : 232-417-0.
- Classifications/Symbols	:	- CORROSIVE (C)
- R phrases	:	R 35: Causes severe burns. R 22: Harmful if swallowed.
- S phrases	:	S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39: Wear suitable protective clothing, gloves and eye and face protection. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
>>Further regulations		
United Kingdom	:	Handle in accordance with relevant British legislation: Chemical Hazard Information and Packaging for Supply Regulations Control of Substances Hazardous to Health Regulations Environmental Hygiene Guidance: EH/40 Occupational Exposure Limits (revised annually). Environmental Protection Act Collection and Disposal of Waste Regulations Carriage of Dangerous Goods by Road Regulations Carriage of Dangerous Goods by Rail Regulations Carriage of Dangerous Goods by Road and Rail (Classification, Packaging and Labelling) and use of Transport Pressure Receptacles Regulations
NOTE	:	The regulatory information given above only indicates the principal regulations specifically applicable to the product described in the Safety Data Sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16 Other information

Uses

- Prohibited uses	:	This product is only intended for industrial use.
Chemical formula	:	H (H PO3)n OH (n = 4.5) .

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfil his obligations regarding the use of hazardous products. This information is not exhaustive. This does not exonerate the user from ensuring that legal obligations, other than those mentioned, relating to the use and storage of the product, do not exist.This is solely his responsibility.