



SAFETY DATA SHEET

PHOSPHINE

Page: 1 / 10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

1 Product and company identification.

PRODUCT NAME	:	PHOSPHINE
Use	:	Manufacturing intermediates. Intermediate for synthesis.
SUPPLIER	:	Manufacturer :
Name	:	Rhodia UK Limited
Address	:	P.O Box 80 Trinity Street, Oldbury West Midlands B69 4LN, UK
Telephone number	:	0044 121 541 3731 (UK: 0121 541 3731)
Telefax number	:	0044 121 541 3859 (UK: 0121 541 3859)
MANUFACTURING SITE	:	
Factory	:	Oldbury
Address	:	P.O. Box 80 Trinity Street Oldbury West Midlands B69 4LN. UK
Telephone number	:	0044 121 552 3333 (UK: 0121 552 3333)
Telefax number	:	0044 121 541 3235 (UK: 0121 541 3235)
E-mail	:	Information.FDS@eu.rhodia.com
EMERGENCY TELEPHONE NUMBER	:	Multi Lingual Emergency Number (24/7) Europe / America / Africa: +44 1235 239 670 (UK) Asia Pacific: +65 3103 1074 (Singapore) Middle East & Africa (speaking Arabic): +44 1235 239 671 (UK) China: + 86 10 5100 3039 (Beijing) [*]

2 Hazards identification

MOST IMPORTANT HAZARDS

Adverse human health effects

: Very toxic by inhalation.
Causes burns.
Risk of serious damage to eyes.

Main symptoms

: Inhalation may be fatal.

Environmental effects

: Very toxic to aquatic organisms.

Physical and chemical hazards

- Fire or explosion

SAFETY DATA SHEET

PHOSPHINE

Page: 2/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

Specific hazards	: Extremely flammable gas. Spontaneously flammable in air.
	: According to EC regulations, this product is classified as: - EXTREMELY FLAMMABLE. - VERY TOXIC. - CORROSIVE. - DANGEROUS FOR THE ENVIRONMENT.

3 Composition / information on ingredients

>> SUBSTANCE

Common chemical name	: PHOSPHINE
Synonyms	: Hydrogen phosphide
Further data	: EINECS N°: 232-260-8
CAS number	: 7803-51-2

4 First-aid measures

Inhalation	: Quickly move the person away from the contaminated area. Make the affected person rest. Always obtain medical attention immediately. Show this sheet to the doctor.
Skin contact	: Wash with soap and water. Wash immediately and thoroughly for a prolonged period (at least 15 minutes). Remove all contaminated clothing and footwear. Obtain medical attention immediately. Show this sheet to the doctor.
Eye contact	: Immediately rinse with plenty of running water for a prolonged period, (at least 15 minutes) whilst keeping the eyes wide open Always obtain medical advice immediately, even if there are no symptoms. Show this sheet to the doctor.
Ingestion	: Not specifically applicable.
Protection of first-aiders	: Do NOT enter without appropriate protective equipment. - self-contained breathing apparatus.
Notes to the physician	: Immediate specific treatment may be necessary in case of severe poisoning.
Further information	: Establish a first aid action plan before using this product. Use appropriate protective equipment when treating a contaminated person.

SAFETY DATA SHEET

PHOSPHINE

Page: 3/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

5 Fire - fighting measures

Extinguishing media

- Suitable : All extinguishing agents can be used (water, foam, powders, carbon dioxide, sand ...).
- Not suitable : None. If there is a fire close by, use suitable extinguishing agents.

Specific hazards

- : On heating or during combustion:
Toxic and highly flammable gases are released (explosion hazard).
Dense white fumes are given off which may obscure the area

Specific fire fighting methods

- : Do NOT attempt to fight the fire without suitable protective equipment.
Cut off the supply of the product.
Allow the fire to burn itself out.
Be careful, the product may re-ignite.
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

- : Self-contained breathing apparatus.
Complete protective clothing.

Further information

- : In the presence of water, forms acidic solutions.

6 Accidental release measures

Personal precautions

- : Do NOT attempt to take action WITHOUT suitable protective equipment.
Do not breathe gas.
Do NOT approach from DOWNWIND.
Avoid contact with skin and eyes.
If spillage occurs on the public highway, indicate the danger and notify the authorities (police, fire brigade).
- full protective clothing and equipment.- self-contained breathing apparatus.
For further information refer to section 8
"Exposure-controls/personal protection".
Evacuate the danger area.
Only qualified personnel equipped with suitable protective equipment may intervene.
Remove all sources of ignition.
Stop the leak as quickly as possible (using non-sparking tools).
Mechanically ventilate the spillage area, whilst avoiding the formation of explosive concentrations.

Environmental precautions

- : Prevent the product from spreading into the environment.

Methods for cleaning up

SAFETY DATA SHEET

PHOSPHINE

Page: 4/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

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- | | | |
|----------------------------|---|---|
| - Recovery | : | Flammable product. Take all necessary precautions. Earth the containers and the equipment. Use flame-proof equipment. |
| - Cleaning/Decontamination | : | Ventilate the area thoroughly, especially low lying areas (basements, workpits etc). |
-

7 Handling and storage

HANDLING

- | | | |
|----------------------|---|---|
| Technical measures | : | Closed system, ventilation.
Flameproof ventilation, electrical equipment and lighting.
Earth the equipment used to transfer the product.
Seal systems with water traps
Controlled combustion of gaseous effluent may be required |
| Measures | : | This product must only be handled by skilled operators
Avoid any direct contact with the product. |
| Safe handling advice | : | Obtain special instructions before use.
Ensure that there is a suitable ventilation system. Do NOT handle in a confined space.
Do NOT expose to heat.(Explosion risk).
Handle and use in accordance with good occupational hygiene and safety practice.
Do not mix with incompatible materials (See list section 10). |

STORAGE

- | | | |
|--------------------|---|--|
| Technical measures | : | Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.
ONLY use containers or transfer systems approved by the Authorities |
|--------------------|---|--|

Storage conditions

- | | | |
|-----------------------|---|--|
| - Recommended | : | Store: <ul style="list-style-type: none">- in a cool, dry area- in a well-ventilated area- away from any source of ignition.- away from direct sunlight.- only in the original container- the container tightly closed. |
| - To be avoided | : | Do NOT heat the storage container |
| Incompatible products | : | Oxidizing agents and oxidizing materials. |
| Packaging | : | - Steel cylinders. |
| Packaging materials | : | |
| - Recommended | : | Original packaging. |
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SAFETY DATA SHEET

PHOSPHINE

Page: 5/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

8 Exposure controls / personal protection

Engineering measures	: Only process in a closed system.
Control parameters	
Exposure limit values (Human Health)	
- Occupational exposure limit values (France)	: VME: 0.14 mg/m ³ (0.1 ppm) VLE: 0.28 mg/m ³ (0.2 ppm)
- ACGIH Threshold Limit Values (U.S.A./A.C.G.I.H.)	: TLV (TWA) : 0.3 ppm TLV (STEL) : 1 ppm
- Limits (UK)	: WEL: 0.3 ppm (0.42 mg/m ³) (15 minute STEL).
Surveillance procedures	: Monitoring of the atmosphere in the work place.
Personal protective equipment	
- Respiratory protection	: Handling the product (as is): Respiratory protective device with a gas filter. Rescue type personal respiratory protection must be permanently available and easily accessible with no delay.
- Hand protection	: Protective gloves made of PVC.
- Eye protection	: Safety spectacles and a face shield.
- Skin and body protection	: Protective clothing. Safety foot-wear.
Collective emergency equipment	: Personal protective equipment available close by in case of emergency. Eye fountain. Safety shower. (For further information see section 4).
Further information	: Do NOT rely on the odour : olfactory level is above the exposure limit.

9 Physical and chemical properties

APPEARANCE

- Physical state	: (gas)
- Colour	: colourless.
Odour	: unpleasant. garlic
pH	: Not applicable
Specific temperatures	
- Melting	: -133°C.
- Boiling	: -87.7°C.
Critical temperature	: 52°C.
Flammability characteristics	
- Flash point	: No information available.

SAFETY DATA SHEET

PHOSPHINE

Page: 6/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

- Auto-ignition temperature	:	At ambient temperature (Spontaneous ignition)
Oxidizing properties	:	Not applicable
Explosion properties		
- Lower	:	1.8%
Vapour density (air = 1)	:	1.146 to 20°C.
Solubility		
- in water	:	26 % (volume).
- in organic solvents	:	Not determined.

10 Stability and reactivity

Stability	:	Can spontaneously catch fire on contact with air.
Hazardous reactions		
- Conditions to avoid	:	May explode under specific conditions. - on contact with air.
- Materials to avoid	:	- oxidizing agents. - oxidizing materials. - halogenated compounds.
- Hazardous decomposition products	:	(Phosphorus oxides).

11 Toxicological information

Acute toxicity	:	LC 50 inhalation, 4h : 11 ppm. LC 50 inhalation, 4h : 0.016 mg/l. (Rat) Very toxic by inhalation. (Published data).
Local effects	:	Causes burns. Risk of serious damage to eyes.
Specific effects		
- Mutagenicity	:	epidemiological study Chromosomal aberrations : Positive. (Published data).

SAFETY DATA SHEET

PHOSPHINE

Page: 7/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

12 Ecological information

DEGRADABILITY

Abiotic degradation

- Other physico-chemical reactions : Oxidation.

BIODEGRADABILITY

- Ultimate aerobic biodegradability : Not applicable

Persistence : Substance is totally biotransformed (metabolized).
(Published data).

BIOACCUMULATION

Octanol/water partition coefficient : Not applicable

Bioconcentration factor. : Not bioaccumulable.
(internal evaluation)

ECOTOXICITY

Effects on the aquatic environment : By analogy
To be considered to be :
Very toxic to aquatic organisms tested.
(Published data).

13 Disposal considerations

RESIDUES FROM PRODUCT

Prohibition : Do NOT discharge waste into drains. Do not allow the product
to be released into the environment.

Destruction/Disposal : Consult the manufacturer or supplier for information regarding
recovery and recycling of the product.
Dispose of in accordance with relevant local regulations.
Dispose of this product as hazardous waste.

CONTAMINATED PACKAGING

Prohibition : Do not incinerate. Do not de-gas the packaging in the
atmosphere.

Decontamination/cleaning : Take preliminary precautions based on the dangerous properties
of the product.
Empty the packaging completely prior to disposal.

Destruction/Disposal : Return to the supplier.

NOTE : The user's attention is drawn to the possible existence of local
regulations regarding disposal.

SAFETY DATA SHEET

PHOSPHINE

Page: 8/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

14 Transport information

INTERNATIONAL REGULATIONS

Land

- Rail/road (RID/ADR) : UN number: 2199
Proper Shipping Name (Technical Name) : PHOSPHINE
Labelling: 2.3 + 2.1.
ADR tunnel category : (D)
Class/Division : 2.3
Environmentally hazardous mark : YES

Sea (IMO/IMDG) : UN Number: 2199
Proper Shipping Name (Technical Name) : PHOSPHINE
Labelling: 2.3 + 2.1.
Class/Division : 2.3
Marine pollutant (environmentally hazardous mark) : YES
Emergency schedule (EmS): F-D, S-U.

Air (ICAO-IATA) : UN number: 2199
Proper Shipping Name (Technical Name) : PHOSPHINE
Class/Division : 2.3
Environmentally hazardous mark : NO
Passenger aircraft: FORBIDDEN.
Cargo aircraft: FORBIDDEN.

OTHER REGULATIONS

- United Kingdom: Rail/road : Substance identification number: 2199.
Classification for conveyance: 2.3.
Subsidiary risk: 2.1
Emergency action code: 2PE.

NOTE : The above regulatory prescriptions are those valid on the date of publication of this sheet.

15 Regulatory information

LABELLING

EC regulations : Mandatory labelling (prescribed) of hazardous substances:
APPLICABLE
- Identification of the hazardous product : PHOSPHINE
EC No. : 232-260-8.
- Classifications/Symbols : **- VERY TOXIC (T+)**
- EXTREMELY FLAMMABLE (F+)
- DANGEROUS FOR THE ENVIRONMENT (N)

SAFETY DATA SHEET

PHOSPHINE

Page: 9/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

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- | | | |
|---|---|---|
| - R phrases | : | R 12 : Extremely flammable.
R 17 : Spontaneously flammable in air.
R 26 : Very toxic by inhalation.
R 34: Causes burns.
R 50: Very toxic to aquatic organisms. |
| - S phrases | : | S 28: After contact with skin, wash immediately with plenty of soap and water.
S 36/37: Wear suitable protective clothing and gloves.
S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
S 61: Avoid release to the environment. Refer to special instructions/safety data sheet.
S 63: In case of accident by inhalation : remove casualty to fresh air and keep at rest. |
| >>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 Workplace 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. |
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16 Other information

Uses

- | | | |
|-------------------|---|--|
| - Prohibited uses | : | This product is only intended for industrial use. |
| * Update | : | Subheadings and text which have been modified since the previous version are indicated with an asterisk (*). |
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SAFETY DATA SHEET

PHOSPHINE

Page: 10/10

Date/Revision: 14/04/2010

Version: 5 UK

Cancels and replaces version: 4.00 UK

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.