

## Material Safety Data Sheet

### Phosphorus Pentachloride (PCl<sub>5</sub>)

#### 1. IDENTIFICATION

##### A. Product name:

Phosphorus Pentachloride

##### B. Recommended use of the chemical and restrictions on use:

Used for making the chlorinating agent, catalyst, dehydrator.

##### C. Information of manufacturer, supplier:

ADDTEK CHEMICAL SHANGHAI CO LTD

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#### 2. HAZARD IDENTIFICATION

##### A. Classification:

Flammable solids : 1

Acute Toxicity-Inhalation : 4

Skin corrosion/irritation : 2

Toxic to reproduction : 1A

Specific target organ toxicity(single exposure) : 1

Specific target organ toxicity(single exposure) : 3

Specific target organ toxicity(repeated exposure) : 1

Aspiration hazard : 1

##### B. Label element, including precautionary statements:

o Symbols:



o Signal word(s):

Risky

o Hazard statement(s):

Harmful if swallowed

Deadly if sucked

Irritating to the skin

Risk of serious damage to the eyes

Long exposure may cause danger to organs

o Precautionary statement(s):

⊙ Prevention

Dry container

Containers are ventilated

To avoid breathing in any gas/mist/smoke

No water

Wear Eye Mask and face mask

⊙ Response

Skin contact: Use the soft paper or the cotton to wipe the poison away as soon as possible .And continue immersion with 3% sodium bicarbonate fluid. Then flush it out by massive water and go to see a doctor immediately.

Eyes contact: Use the soft paper or the cotton to wipe the poison away as soon as possible. Then flush it out by massive water and go to see a doctor immediately.

Eating: When patient is sober, let him rinse the mouth by milk or egg white and go to see a doctor immediately.

⊙ Storage

1. Stored into dry and clean warehouse

2. Keep off kindling material and heat source, temperature should not be over 25°C, relative humidity should not be over 75%

3. The packing must be sealed, no moisture. Should deposit storage separately with flammable, combustible material, the alkalis, the oxidant and the metal powder.

4. it's not suitable for a long time saves, in order to avoid deteriorate.

5. Storage area should has some collection material and emergency process equipment

⊙ Disposal

In accordance with local regulation

**C. Other hazards which do not result in classification;**

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### 3. COMPOSITION/INFORMATION ON INGRED

Chemical identity

| Common name              | synonym | CAS number | Percentages (%) |
|--------------------------|---------|------------|-----------------|
| Phosphorus Pentachloride | -       | 10026-13-8 | ≥98%            |

### 4. FIRST AID MEASURES

**A. Eye contact:**

Use the soft paper or the cotton to wipe the poison away as soon as possible. Then flush it out by massive water and go to see a doctor immediately.

**B. Skin contact:**

Use the soft paper or the cotton to wipe the poison away as soon as possible .And continue immersion with 3% sodium bicarbonate fluid. Then flush it out by massive water and go to see a doctor immediately.

**C. Inhalation:**

Remove person to fresh air from the exposure area.If person is not breathing, provide artificial respiration.

Seek medical attention immediately.

**D. Ingestion:**

When patient is sober, let him rinse the mouth by milk or egg white and go to see a doctor immediately.

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**E. Most important symptoms/effect, acute and delayed:**

Inhalation danger, Toxic to skin, Toxic to the respiratory organs.

**F. Indication of immediate medical attention and special treatment needed, if necessary:**

- Inhalation: consider to provide oxygen
- Ingestion: consider to empty the stomach

**5. FIRE-FIGHTING MEASURES****A. Suitable extinguishing media:**

Dry powder, carbon dioxide. Water is Prohibit.

**B. Specific hazards arising from the chemical:**

Massive hot and thick smoke

**C. Special protective equipment and precautions for firefighters:**

To wear full body chemical protective clothing and air respirator

**6. ACCIDENTAL RELEASE MEASURES****A. Personal precautions, protective equipment and emergency procedures**

Dry container

Containers are ventilated

To avoid breathing in any gas/mist/smoke

No water

Wear Eye Mask and face mask

**B. Environmental precautions:**

Harmful to environment, special attention to its pollution to water

**C. Methods and materials for containment and cleaning up:**

1. for small release

Collect them in a dry, clean container with cover

2. for large release

Cover them with plastic, and collect them under professional instructions

**7. HANDLING AND STORAGE****A. Precautions for safe handling:**

Pack and unload lightly as transporting to prevent damaging the packing vessel. The sub package and the transporting work need pay attention to the individual protection. The transportation should travel according to the stipulation route, do not pause on the midway. Do not transport on the rainy day.

**B. Conditions for safe storage. Including incompatibilities:**

Storage into dry and clean warehouse. Keep off kindling material and heat source. The packing must be sealed, not moisture. Should deposit storage separately with flammable, combustible material, the alkalis, the oxidant and the metal powder. Cannot mix them as transport and storage. Humayun. It's not suitable for a long time saves, in order to avoid deteriorate.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****A. Exposure limits in the air of the workplace, biological limit values:**

The maximal allowable concentration: (China) MAC 0.5mg/m<sup>3</sup>

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**B. Appropriate engineering controls:**

The airtight operation, pay attention to the ventilate, mechanization and automation as far as possible.

**C. Individual protection measures:****o Respiratory protection:**

When you contact is steam or smog, you must wear the gas mask or the air feed hard helmet .suggest to wear the self-sufficient respirator under the urgent situation or escape.

**o Eye protection:**

Wear the chemical safety protection glasses.

**o Hand protection:**

**Wear the rubber gloves**

**o Body protection:**

Wear the work suit (corrosion preventing material)

**9. PHYSICAL AND CHEMICAL PROPERTIES****A. Appearance (physical state, color etc.):**

Colorless transparent liquid, fumes in the humid air.

**B. Odor:**

Irritating

**C. Odor threshold:**

No data

**D. pH:**

**Not applicable**

**E. Melting point/freezing point:**

148

**F. Initial boiling point and boiling range:**

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**G. Flash point:**

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**H. Evaporation rate:**

No data

**I. Flammability (solid, gas) :**

**Not applicable**

**J. Upper/lower flammability or explosive limits:**

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**K. Vapor pressure:**

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**L. Solubility (ies):**

May mix and dissolve in the carbon bisulfide, water, the benzene tetrachloride.

**M. Vapor density:**

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**N. Specific gravity:**

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**O. Partition coefficient: n-octanol/water:**

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**P. Auto-ignition temperature:**

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**Q. Decomposition temperature:**

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**R. Viscosity:**

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## 10. STABILITY AND REACTIVITY

**A. Chemical stability:**

Stable

**B. Possibility of hazardous reactivity:**

No data

**C. Conditions to avoid:**

Humid air

**D. Incompatible materials**

Strong reducing agent, Active metal powder, Water, Alcohol type

**E. Hazardous decomposition products:**

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## 11. TOXICOLOGICAL INFORMATION

**A. Information on the likely routes of exposures:**

○ **Inhalation exposure:**

Irritation

○ **Ingestion exposure:**

Irritation

○ **Skin exposure:**

Irritation

○ **Eye exposure:**

Irritation

**B. Delayed and immediate effects and also chronic effects from short and long term exposure:**

○ **Acute toxicity:**

Acute lethal, (the white rat at the half) lethal is LD<sub>50</sub>:660mg/kg, (the white rat absorb the half) lethal concentrations is LC<sub>50</sub>:205PPm/4 hour.

○ **Skin corrosion/irritation:**

Irritation to skin

○ **Serious eye damage/irritation:**

Can cause weak irritation

○ **Respiratory sensitization:**

Irritation

○ **Skin sensitization:**

Irritation

○ **Carcinogenicity:**

Not applicable

○ **Germ cell mutagenicity:**

Not applicable

○ **Reproductive toxicity:**

Not applicable

○ **Specific target organ systemic toxicity-single exposure:**

Not applicable

○ **Specific target organ systemic toxicity-repeated exposure:**

Not applicable

○ **Aspiration hazard:**

Irritation

**C. Numerical measures of toxicity (such as acute toxicity estimate):**

No data

## 12. ECOLOGICAL INFORMATION

**A. Aquatic, terrestrial organism's toxicity:**

No data

**B. Persistence and degradability:**

No data

**C. Bio accumulative potential:**

No data

**D. Mobility in soil:**

No data

**E. Other adverse effects:**

No data

## 13. DISPOSAL CONSIDERATIONS

**A. Disposal methods:**

Dispose according to the related regulations.

**B. Disposal considerations (Specify disposal container and methods):**

Compliance with Applicable Laws and Standards

## 14. TRANSPORT INFORMATION

**A. UN Number:**

1806

**B. UN Proper Shipping Name:**

Phosphorus Pentachloride

**C. Transport hazard class(es):**

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**D. Packing group, if applicable:**

II

**E. Environmental hazards:**

No data

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**F. Special precautions for user:**

The transportation should travel according to the stipulation route, do not pause on the midway. Do not transport on the rainy day.

**15. REGULATORY INFORMATION****A. Safety, health and environmental regulations specific for the product in question:**

People's Republic of China State Council makes the dangerous chemical safety control rule (344th). It made the corresponding stipulation in view of chemistry dangerous material safety in production , management ,usage ,small storage , transportation and handling, abandon and so on the aspects.

**16. OTHER INFORMATION****A. References and sources for data:**

Zhang Weifan—Security Handbook of *Commonly Used Dangerous Chemicals*. Chinese medicine science and technology publication, 1992.

Wang Ziqi—Handbook of *Virulent Chemical Health and Safe Practical*. Chemical industry Publication, 1993.

**B. Originated date:**

May 1<sup>st</sup>, 2004

**C. Revision number and date:**

- Revision: 3

- Final revision date: NOV. 2016