

Material Safety Data Sheet

According to 91/155 EEC(2001/58 EC)

Printing date: 01.12.2006

Reviewed on: 01.12.2006

1 Identification of substance:

- **Product details:**
- **Trade name:** triphenylphosphite (TPP)
- **Application of the substance / the preparation**
 Antioxidant
 Chemicals for synthesis
- **Supplier/Manufacturer:**
 Penpet Petrochemical Trading GmbH
 Merkur-Park
 Sieker Landstrasse 126
 22143 Hamburg
 Germany
 Tel: +49 40 675 799 0
 Fax: +49 40 675 799 99 / 88
- **Information department:** see above
- **Emergency information:** National Poisons Information Centre Tel.: +44 (0)870 6006266

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
 101-02-0 triphenyl phosphite
- **Identification number(s):**
- **EINECS Number:** 202-908-4
- **EU Number:** 015-105-00-7

3 Hazards identification

- **Hazard description:**



Xi Irritant
 N Dangerous for the environment

- **Information pertaining to particular dangers for man and environment:**
 R 36/38 Irritating to eyes and skin.
 R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Classification system:**
 The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.
- **Additional information:** Aqueous solutions of the substance are acidic.

4 First aid measures

- **General information:** If symptoms persist or in case of doubt seek medical advice.
- **After inhalation:**
 Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
 In case of unconsciousness, place patients on their side in a stable position for transportation.
- **After skin contact:**
 Remove soiled clothes and shoes.
 Clean effected skin thoroughly with water and a mild cleansing agent. No residues shall remain on the skin.
 If available apply polyethylenglycol (PEG 400, Lutrol) and let it remain on the skin for several minutes.
 Afterwards:
 Wash with water.
 Seek medical treatment.

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- **After eye contact:**
Rinse the eyes with open eyelids for 10 - 15 minutes with water. Then consult a doctor or better an eye specialist.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Induce vomiting, if person is conscious. Seek medical help.
If vomiting occurs spontaneously:
Hold the head of the casualty low with the body in a prone position in order to avoid aspiration.
- **Information for doctor:**
- **The following symptoms may occur:**
Local irritation symptoms
Central nervous depression
Ataxia
- **Treatment:** Symptomatic treatment

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards caused by the material, its products of combustion or resulting gases:**
Dangerous decomposition product see chapter 10: stability and reactivity
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information:**
Pay special attention to corrosive effects if water is used as extinguishing agent.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Person-related safety precautions:**
Ensure adequate ventilation
Avoid formation of dust.



Wear protective equipment. Keep unprotected persons away.

- **Measures for environmental protection:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to penetrate the ground/soil.
In case of seepage into the ground inform responsible authorities.
- **Measures for cleaning/collecting:**
Pick up mechanically.
Avoid dust formation absolutely. If necessary pick up with a tested and approved industrial vacuum cleaner.
Send for recovery or disposal in suitable receptacles.
Dispose contaminated material as waste according to item 13.

7 Handling and storage

- **Handling**
- **Information for safe handling:**
Prevent formation of dust.
Any deposit of dust which cannot be avoided must be regularly removed.
Ensure good ventilation/exhaustion at the workplace.
Avoid inhalation of dust.
Avoid contact with eyes and skin.
Avoid inhalation of vapours formed by heated product.

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Keep the working area dry and clean.
Protect from humidity.

· **Information about protection against explosions and fires:**

Dust can combine with air to form an explosive mixture.



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges

Work on containers and pipelines is permitted only after thorough purging and inerting.

· **Storage**

· **Requirements to be met by storerooms and receptacles:**

Store container tightly sealed at a cool and dry place with sufficient ventilation.

Provide acid-resistant floor.

Prevent any seepage into the ground.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from feed.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Protect from humidity and water.

Store in a cool place.

· **Storage class** 11 Combustible solids

8 Exposure controls and personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components with limit values that require monitoring at the workplace:** Not required.

· **Additional Occupational Exposure Limit Values for possible hazards during processing:**

Observe general threshold limit for dust.

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Vacuum clean contaminated clothing. Do not blow or brush off contamination.

Avoid contact with the eyes and skin.

Use skin protection cream for skin protection.

Do not inhale dust / smoke / mist.

Provide eye bath.

· **Breathing equipment:**

Not necessary if room is well-ventilated.

At formation of dust:

Short term filter device:

Filter P2.

· **Protection of hands:**

Chemical resistant gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

· **Material of gloves:**

Nitrile rubber, NBR

Butyl rubber, BR

Fluorocarbon rubber (FKM)

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The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material:**

- 480 min. NBR (0,35 mm)
- 480 min.(butyl rubber 0,5 mm)
- 480 min. FKM (0,4 mm)

The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Not suitable are gloves made of the following materials:**

- Polychloropren rubber (CR)
- Natural rubber, NR

· **Eye protection:** Tightly sealed goggles.

· **Body protection:** Protective work clothing.

9 Physical and chemical properties:

· **General Information**

Form:	Liquid or solid (depending on ambient temperature)
Colour:	Colourless
Odour:	Phenol-like

· **Change in condition:**

Melting point/Melting range:	25°C
Boiling point/Boiling range:	360°C

· **Flash point:** 188°C

· **Flammability (solid, gaseous)** Product is not flammable.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapour pressure at 200°C:** 1.3 hPa

· **Density at 20°C:** 1.184 g/cm³

· **Solubility in / Miscibility with Water:**

Insoluble
decomposes slowly

· **pH-value (200 g/l) at 20°C:** 1

· **Segregation coefficient (n-octanol/water):** 6.62 log POW

· **Additional information:** Soluble in most organic solvents.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

· **Materials to be avoided:**

- Water and humidity
- Acids
- Strong oxidants

· **Dangerous reactions:** In contact with water phosphoric acid is formed.

· **Dangerous products of decomposition:**

In the case of fire or at high temperatures the formation of the following decomposition products is possible.

- Phosphorus oxides
- Phenol
- Phosphine

· **Additional information:** moisture sensitive

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11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:**
Irritant to skin and mucous membranes.
Repeated or prolonged skin contact may have caustic effects on skin.
- **on the eye:** Irritating effect.
- **Sensitization:**
Potential skin sensitization cannot be excluded completely on the basis of animal experiments and experience with human beings.

12 Ecological information

- **Behaviour in environmental systems:**
- **Mobility and bioaccumulation potential:** log P (o/w) >3 - Considerable bioaccumulation is to be expected
- **Ecotoxic effects:**
- **Aquatic toxicity:**

101-02-0 triphenyl phosphite

 EC₅₀/48h 36.6-58.8 mg/l (daphnia magna)

- **Remark:**
Very toxic for fish
Harmful effect by pH-value shift.
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.



Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Very toxic for aquatic organisms

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

13 Disposal considerations

- **Product:**
- **Recommendation:**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal according to instructions of local authorities.

- **Uncleaned packagings:**
- **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

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14 Transport information

· Land transport ADR/RID (cross-border)


- **ADR/RID class:** 9 (M6) Miscellaneous dangerous substances and articles.
- **Danger code (Kemler):** 90
- **UN-Number:** 3082
- **Packaging group:** III
- **Label:** 9
- **Description of goods:** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphite)
- **Remarks:** Limited Quantity: 6 kg per inner packaging, 30 kg gross per packaging unit

· Maritime transport IMDG:


- **IMDG Class:** 9
- **UN Number:** 3082
- **Label:** 9
- **Packaging group:** III
- **EMS Number:** F-A S-F
- **Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphite)

· Air transport ICAO-TI and IATA-DGR:


- **ICAO/IATA Class:** 9
- **UN/ID Number:** 3082
- **Label:** 9
- **Packaging group:** III
- **Proper shipping name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphite)
- **Remarks:**
 - Packing Instructions:
 - For Limited Quantities: Y914 (Max Net Qty/Pkg: 30 kg G)
 - Passenger and Cargo Aircraft: 914 No limit
 - Cargo Aircraft only: 914 No limit

15 Regulations

· Markings according to EC guidelines:

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials EC-labelling

· Code letter and hazard designation of product:


Xi Irritant
N Dangerous for the environment

· Risk phrases:

36/38 Irritating to eyes and skin.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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· Safety phrases:

- 28 After contact with skin, wash immediately with plenty of soap and water, and also with polyethylene-glycol 400, if possible.
- 60 This material and its container must be disposed of as hazardous waste.
- 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

· National regulations

- Information about limitation of use:** Restrictions on juvenile employment must be observed.

- Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
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16 Other information:

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Reasons for amendments:** S-phrases

· Department issuing MSDS:

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