1. Identification of the substance or mixture and of the supplier

Product: Potassium phosphite 38.9% + Chlorothalonil 16.7%
Commercial product names: Catamaran®
EPA registration number: 42519-31
Recommended use: Fungicide
Supplier: Luxembourg-Pamol, Inc.
3647 Willowbend Boulevard, Suite 810
Houston, TX 77054, USA
Tel: 877-343-4239

Manufacture: Luxembourg Industries Ltd.
27 Hamered St., Tel Aviv, 6812509
ISRAEL

Emergency phone number: +972 3 796 4300
For USA Only: 1-800-424-9300

Catamaran® is a registered trademark of Luxembourg

2. Hazards identification

Classification of the product (two classifications are presented: a. according to Global Harmonized System of Classification and Labelling of Chemicals (GHS, fifth revised edition, 2013) and b. according to OSHA HCS 2012, 29 C.F.R. § 1910.1200

a. ACCORDING TO GHS

Hazard classification:
- Carcinogenicity: Category 2
- Eye damage/irritation: Category 2B
- Skin Sensitization: Category 1
- Acute aquatic toxicity: Category 1
- Chronic aquatic toxicity: Category 1

Label elements:
- Pictogram:
- Signal word: Warning
- Hazard statement(s):
  - H351: Suspected of causing cancer.
  - H317: May cause an allergic skin reaction.
  - H320: Causes eye irritation.
  - H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):
- Prevention: P201 Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
P261  Avoid breathing mist/spray.
P264  Wash hands and exposed skin thoroughly after handling.
P272  Contaminated work clothing should not be allowed out of the workplace.
P280  Wear protective gloves and clothing, eye and face protection.
P273  Avoid release to the environment.

Response:  P308+P313  If exposed or concerned: Get medical advice/attention.
P302+P352  IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313  If eye irritation persists: Get medical advice/attention.
P333+P313  If skin irritation or rash occurs: Get medical advice/attention.
P362+P364  Take off contaminated clothing and wash it before reuse.
P391  Collect spillage.

Storage:  P405  Store locked up.

Disposal:  P501  Dispose of contents/container in accordance with national/international regulations.

b. ACCORDING TO OSHA HCS 2012, 29 C.F.R. § 1910.1200

<table>
<thead>
<tr>
<th>Hazard(s) identification:</th>
<th>Carcinogenicity  Category 2</th>
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<td>Exclamation mark</td>
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</tr>
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<td>Prevention</td>
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</tr>
<tr>
<td></td>
<td>Wear protective gloves/protective clothing/eye protection/face protection.</td>
</tr>
<tr>
<td></td>
<td>Wash hands and exposed skin thoroughly after handling.</td>
</tr>
<tr>
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If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
If on skin: Wash with plenty of water/soap.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.

Storage: Store locked up.
Disposal: Dispose of contents/container in accordance with local regulations.

Hazards Not Otherwise Classified (HNOC): Not known.

3. Information on ingredients contributing to hazard

Chemical name: Potassium salts of phosphorous (phosphonic) acid
Tetrachloroisophthalonitrile (IUPAC)
Common name: Potassium phosphite Chlorothalonil
Chemical formula: KH$_2$PO$_3$ + K$_2$HPO$_3$ C$_8$Cl$_4$N$_2$
Structural formula:

\[
\begin{align*}
\text{KH}_2\text{PO}_3 + \text{K}_2\text{HPO}_3 + \text{C}_8\text{Cl}_4\text{N}_2
\end{align*}
\]

CAS No.: 13977-65-6 + 13492-26-7 1897-45-6
Content: 25%, 360-393 g/L
                                   16.7%, 238-262 g/L
(phosphorous acid equivalent)

4. First-aid measures

Call a physician immediately in all cases of suspected poisoning.

Ingestion: Call a poison control center or doctor immediately for treatment advice.
Have person sip a glass of water if able to swallow.
Do not induce vomiting unless told to do so by a poison control center or doctor.
Do not give anything to an unconscious person.

Inhalation: Move person to fresh air.
If person is not breathing, call an ambulance then give artificial respiration, preferably mouth-to-mouth if possible.
Call a poison control center or doctor for further treatment advice.

Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes.
Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.
Call a poison control center or doctor for further treatment advice.

Skin: Take off contaminated clothing.
Rinse skin immediately with plenty of water for 15-20 minutes.
Call a poison control center or doctor for further treatment advice.

Most important symptoms and effects, both acute and delayed.

Chlorothalonil was reported to cause skin irritation and irritation of mucous membranes of the eye and respiratory tract. Dermal sensitization is reportedly rare and no cases of human systemic poisoning have been reported. There is evidence in humans of contact dermatitis with repeated exposure of Chlorothalonil. Occupational exposure to chlorothalonil was reported to induce asthma symptoms, which resolved cessation of exposure. No cases of systemic poisoning in humans have been reported in the published medical literature.

Indication of any immediate medical attention and special treatment needed.

There is no specific antidote. Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media: Dry chemical, CO₂, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.

Specific hazards arising from the substance or mixture: During fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

Special protective equipment and precautions for firefighters: Clear fire area of all non-emergency personnel. Stay upwind of fire. Wear chemical protective clothing and self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment: Use personal protective equipment. Avoid breathing mist/vapours. Ensure adequate ventilation.

Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Do not let product enter waterways or drains.

Methods and materials for containment and cleaning up: Prevent further leakage or spillage if safe to do so. Contain product with an inert diking material. Vacuum up as much as possible. Place reclaimed product in a closed and properly labeled waste drum. Store drum in separate area until proper disposal. Wash thoroughly after handling.
7. Handling and storage

Precautions for safe handling: Wear suitable protective clothing. Avoid contact with skin and eyes. Do not breathe mist/vapours. Ensure adequate ventilation. Wash hands and exposed skin thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Store locked up. Store in a cool place. Keep container tightly closed in a dry and well ventilated place.

8. Exposure controls / personal protection

Occupational exposure limits: Chlorothalonil:
TLV (ACGIH): Not established
TWA (8 hr): 0.1 mg/m²

Appropriate engineering controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations low. Ensure that eyewash stations and safety showers are in proximity to the work-station location.

Personal protective equipment: Long-sleeved shirt and long pants, shoes plus socks, chemical resistant gloves, dust or mist respirator, and protective eyewear.

9. Physical and chemical properties

Appearance: Liquid
Colour: Off-white to brownish
Odour: Faint paint-like characteristic odour
Odor threshold: Not available
pH (25°C): 6.0-7.0
Melting point/Freezing point: Not available
Boiling point: Not available
Evaporation rate: Not available
Flash point: >100°C
Flammability (solid, gas): Not flammable
Upper/lower flammability or explosive limits: Not available
Vapour pressure (25°C): Not available
Vapour density: Not available
Relative density: Not available
Bulk density (20°C): 1.5-1.6 g/mL
Solubility in water (25°C): Suspension
### Partition coefficient

**n-octanol/water (25°C):**

- Chlorothalonil: \( K_{ow} \log P = 2.92 \)
- Potassium phosphite: Not applicable

### Ignition temperature:

- Not applicable

### Decomposition temperature:

- >100.6°C

### Viscosity (25°C):

- 126.0 cSt (@20°C), 105.6 cSt (@40°C)

### 10. Stability and reactivity

- **Reactivity:** Not available.
- **Chemical stability:** Stable at ambient temperature and under recommended storage and handling conditions.
- **Possibility of hazardous reactions:** Not available.
- **Conditions to avoid:** Not available.
- **Incompatible materials:** The product is incompatible with strong acids, strong bases and oxidizing materials like potassium permanganate.
- **Hazardous decomposition products:** Not available.

### 11. Toxicological information

#### Acute toxicity

- Oral LD\(_{50}\) (rat): >5000 mg/kg
- Dermal LD\(_{50}\) (rabbit): >5000 mg/kg
- Inhalation LC\(_{50}\) (rat): >5.09 mg/L

#### Skin corrosion/irritation

- Skin irritation (rabbit): Slightly irritant

#### Serious eye damage/irritation

- Eye irritation (rabbit): Mildly irritating to eyes (Category 2B)

#### Respiratory or skin sensitization

- Dermal sensitization (guinea pig): A contact sensitizer (Category 1)

#### Germ cell mutagenicity:

- Not available

#### Carcinogenicity:

- Chlorothalonil: There is sufficient evidence in experimental animals for the carcinogenicity of chlorothalonil
  - NTP: Not listed
  - OSHA: Not listed
  - IARC: Group 2B, possibly carcinogenic to humans.
- Potassium phosphite: No carcinogenic potential

#### Reproductive toxicity:

- Not available

#### STOT* single exposure:

- Not available

#### STOT repeated exposure:

- Not available

#### Aspiration hazard:

- Not available

*Specific Target Organ Toxicity
12. Ecological information

Ecotoxicity:

**Birds:**
- Quail, *Coturnix coturnix japonica*, LD$_{50}$: $>2000$ mg/kg

**Fish:**
- *Poecilia reticulata* LC$_{50}$ (96 h): $0.307$ mg/L

**Bees:**
- *Apis mellifera mellifera* LD$_{50}$ (48 h, oral): $>100$ µg/bee

Persistence and degradability:
- Chlorothalonil: Not readily biodegradable
- Potassium phosphite: Not readily biodegradable

Bioaccumulative potential:
- Chlorothalonil: Low bioaccumulative potential
  - Bioconcentration factor (BCF): $< 100$ l/Kg
- Potassium phosphite: No bioaccumulative potential

Mobility in soil:
- Chlorothalonil: Low mobility to immobile
- Potassium phosphite: Medium to low mobility in soil

Other adverse effects: Not available

13. Disposal considerations

According to FIFRA: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. Follow label instructions or contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

14. Transport information

**UN No.:** 3082
**Proper shipping name:** Environmentally hazardous substance, liquid, n.o.s (Chlorothalonil)
**Transport hazard class:** 9
**Packaging group:** III
**Marine pollutant:** Yes

15. Regulatory information

According to FIFRA: This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Hazards to Humans and Domestic Animals
CAUTION
Causes moderate eye irritation.

TSCA Inventory: This product is exempt from TSCA inventory listing requirements as it is solely for FIFRA regulated use.

16. Other information

The information contained herein is applicable solely to the indicated product, and does not relate to any other use of this product as described. Its use is intended by persons having technical skill and at their own discretion and risk. The information has been developed from sources reliable. This information is furnished without warranty, expressed or implied, including the warranties of merchantability and fitness for a particular purpose is made with respect to the information contained herein.

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Version: 1
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