

Material Safety Data Sheet : QUINALPHOS 70%**1. Chemical Product and Company Identification**

Product Name : Quinalphos 70%

Formula : $C_{12}H_{15}N_2O_3PS$

Molecular Weight : 298.3

Chemical Name : O,O-diethyl-O-quinoxaliny-2-yl phosphorothioate

Manufacturer : Sumitomo Chemical India Limited
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2. Composition/Information on Ingredients

Component	CAS No.	% W/W content
Quinalphos	13593-03-8	70 minimum
Xylene	1330-20-7	Q. S.

3. Hazard Identification**Emergency Overview**

Appearance and odour : Reddish brown clear liquid, with typical phosphate ester odour

Warning Statements : Keep out of reach of children

Potential Health Effects

Likely Routs of Exposure : Skin contact, Inhalation and Ingestion

Eye Contact : Unlikely to cause irritation to eye

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- Skin contact** : Not irritating to skin
- Ingestion** : If swallowed, this substance is considered to be toxic and likely to cause damages to internal organ
- Inhalation** : Repeated exposure may cause cholinesterase inhibition.

Environmental Hazards : The product is an organophosphate insecticide

4. First aid measures and Antidote

Emergency and First Aid Procedure –

- If in Eyes** : Immediately flush with plenty of clean water for 15-20 minutes. Remove contact lenses if present after 5 minutes of washing. Get medical attention
- If on Skin** : Take off contaminated clothing, rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or a doctor
- If Inhaled** : Remove person to fresh air, if required give artificial respiration. Call doctor or poison control centre
- If Swallowed** : Call doctor or poison control centre 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 the poison control centre or doctor. Do not give anything by mouth to an unconscious person
- Note to Physician** : Diagnosis can be confirmed estimating cholinesterase activity of blood plasma. Treat symptomatically.
- Antidote** : Administer Atropine Sulfate intravenously in dose of 2-4 mg for an Adult. Administer 2 PAM 1000-2000 mg IM or IV for adult or 15 mg/Kg body weight for children

5. Fire Fighting Measures

- Hazardous product of Combustion** : On decomposition it may give Ethyl sulphide, Diethyl sulphide and Nitrogen oxides
- Extinguishing Media** : Foam, Dry chemical powder, CO₂ type fire extinguisher or Flood with water.
- Unusual Fire and Explosion Hazards** : Exothermic decomposition and violent rupture of containers due to over pressurisation may occur.

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Fire Fighting Equipment : Evacuate area and fight fire from a safe distance. Approach from upwind to avoid hazardous vapours and decomposition products. Use self-contained breathing apparatus. Used equipments should be thoroughly decontaminated.

6. Accidental Release Measure

Personal Protection : Observe all protection and safety precautions. Depending on the magnitude of the spill, use of eye protection, gloves and boots when cleaning up spills are recommended. For PPE see Section 8

Steps to be taken in case of a spill : It is recommended to have a predetermined plan / SOP for the handling of spills.

Stop the source of the spill immediately, if safe to do so. Contain the spill to prevent any further contamination of soil or water.

Keep all bystanders away. Wear full-length clothing and PVC gloves. Shovel and collect the spilled material / contaminated absorbent and place in suitable containers. Thoroughly scrub the floor or other impervious surfaces with a strong industrial detergent and rinse with water.

Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal through incineration.

7. Handling and Storage

Precautions in Handling : In an industrial environment, such as while making formulation, filling or packing, it is recommended to avoid physical contact with the product and to have adequate ventilation.

Avoid spillage into the eyes, or contact with bare skin or clothing. Avoid inhaling vapours, mist. Wash hands, feet, face thoroughly after handling. Remove contaminated clothing immediately.

Precautions in Storage : The product is stable under normal conditions of warehouse storage. Keep container lids tightly closed. Store below 45 °C.

Store in a cool, dry, well- ventilated place away from foodstuffs, animal feed under lock & key.

Specific Use : The product is meant / approved to be used as insecticide.

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- Exposure Limit Values** : Not known
- Personal Protection** : When used in a closed / automated system, personal protection equipment may not be required. When closed system is not possible in case of maintenance, repair, sampling etc, systems must be made nonhazardous before opening
- Respiratory Protection** : The product is likely to pose inhalation exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a vapours or mist, workers should put on respiratory protection equipment with a universal filter
- Protective Gloves** : Wear heavy duty natural rubber gloves
- Eye Protection** : Wear goggles, face shield or safety glasses. It is recommended to have an eye wash fountain available in the work area.
- Skin Protection** : Wear appropriate protective clothing to prevent direct skin contact

9. Physical and Chemical Properties

- Physical State** : Liquid
- Appearance** : Reddish brown clear liquid,
- Odour** : Typical phosphate ester odour
- Relative Density (Specific Gravity)** : 1.04 to 1.15 gm/cc at 25 °C
- pH value** : Data not available
- Viscosity** : Data not available
- Vapour Pressure** : 0.346 mPa at 20 °C
- Vapour Density** : Data not available
- Melting Point / Freezing Point** : Data not available
- Boiling Point** : 142 °C
- Flash Point** : Data not available
- Auto Ignition Temp** : Data not available

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Flammable Limits : Data not available

Solubility in Water : Data not available

10. Stability and Reactivity

Chemical Stability : Product is stable under ambient conditions of storage. Always store below 45 °C.

Materials to Avoid : Avoid contact with alkaline metals.

Hazardous Decomposition Product : Refer to section no. 5

Hazardous Polymerisation : Do not occur

11. Toxicological Information

Health Hazards : Refer to section no. 3

Acute Toxicity : The product is toxic. It should be treated with the usual care of handling hazardous chemicals.

Route(s) of Entry

Ingestion : Oral LD₅₀ rat 71 mg/Kg of body weight

Skin : Dermal LD₅₀ rat 1750 mg/kg of body weight

Inhalation : LC₅₀ (4 hour) rat 0.45 mg/lit air

12. Ecological Information

Acute Oral Toxicity in Birds : LD₅₀ japanese quail 4.3 mg/kg body wt, LD₅₀ mallard duck 37 mg/kg body wt.

Acute Toxicity in Fish (96 hrs LC₅₀) : LC₅₀ (96 hr) carp 3.63 mg/l, LC₅₀ raibow trout 0.005 mg/l

Acute Toxicity Honey bees : LD₅₀ oral 0.07 ug/bee, tropical 0.17 ug/bee

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13. Disposal Considerations

- Waste Treatment Methods** : Keep out of drains, sewers, ditches and waterways.
Left-over material that should not be used or chemically reprocessed and should be disposed of in a landfill approved for pesticide disposal. Other possible methods of disposal are controlled incineration with flue gas scrubbing
- Containers** : Emptied containers may retain vapour and product residue. Observe all labeled safeguards until container is cleaned or destroyed.
- Triple or pressure rinse empty containers. Pour rinse water into formulation tank. Store for collection by approved waste disposal service.
- Dispose of as non hazardous industrial waste. Do not re-use containers.
- Disposal of waste and packaging materials must always be in accordance with all applicable local laws and regulations.

14. Transport Information

The data provided in this section is for information only. Please apply the appropriate regulations to properly classify your shipment for transportation.

Hazardous under the applicable DOT, ICAO/IATA, IMO, TDG

IIMDG Classification

- Proper Shipping Name** : Organophosphorous pesticide, liquid, toxic, flammable, flash point not less than 23 °C
- Hazard class / I D No.** : Class-6.1
- Subsidiary hazard(s)** : 3
- Label** : 6
- UN No.** : 3017
- Packing group** : III
- Marine Pollutant** : Yes

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15. Regulatory Information

- Contains** : Quinalphos 70% (CAS No. 13593-03-8)
- Regulatory Status** : The product is meant for the production of insecticide formulations which may only be used for the applications that are registered for, in accordance with an officially approved label

16. Other Information

This MSDS is intended for storage and transport safety. It summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.

This material should be handled by persons who are made aware of its hazardous properties and have been instructed in the required safety precautions.

This MSDS is not intended for product users who should refer to the product label for safety precautions applicable to them.

The information provided in this safety data sheet is believed to be accurate and reliable, but uses of the product may vary and situations unforeseen by Sumitomo Chemical India Limited may exist. The user has to check the validity of the information under local circumstances.