o-Phenylphenol

This document provides a brief description of o-phenylphenol, its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS safety data sheet.

Identification

Product Name: o-Phenylphenol
Chemical Name: [1,1'-Biphenyl]-2-ol
Synonym(s): 2-Phenylphenol
2-Biphenylol
2-Hydroxybiphenyl
o-Hydroxybiphenyl
OPP

CAS Number: 90-43-7

Description

Overview: o-Phenylphenol is a solid at ambient temperatures. The chemical has a mild phenolic odor and is sold in flake form.

Uses: o-Phenylphenol is used as a preservative in the manufacture of glues, adhesives, dyes, pigments, plastics, rubber and leather products, lubricating oils, textiles, lumber and concrete additives. The chemical is also used as an antimicrobial/bactericide in consumer and commercial sanitizers and hard surface disinfectants and as a fungicide in post harvest application to citrus fruits and pears.

Properties:

Melting Point: 132.8 - 136.4°F (56 - 58°C)
Boiling Point: Approx. 549°F (287.22°C)
Flash Point: Approx. 280°F (137.78°C)
Solubility in Water: Soluble
Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture, at unloading, storage or staging areas, in fruit handling operations (e.g. sorting and packing) and in operations that use products manufactured using o-phenylphenol as an ingredient or intermediate (e.g. metalworking fluids and disinfectants). A much lower potential for exposure exists in facilities using the chemical in closed manufacturing processes by trained personnel.

Employee Training

Workers handling o-phenylphenol are trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. A NIOSH approved air-purifying particulate respirator is recommended for unloading and other operations not contained within a closed system. In addition, LANXESS recommends that tight fitting (non-vented) goggles, long pants, long-sleeved shirts, gloves and foot protection be worn when handling o-phenylphenol. Air supplied positive pressure respirators, engineering or process controls may be necessary in operations where vapor and/or dust concentrations are expected.

Consumer Exposure

LANXESS Corporation does not sell o-phenylphenol to the general public. The chemical is approved for post harvest application to citrus fruits and pears and as an ingredient in hand sanitizers, surface disinfectants and other consumer products. Trace amounts of the chemical may be present on disinfected hard surfaces and in ambient (indoor) air.

Short-Term Health Effects

o-Phenylphenol may be irritating to skin with symptoms of redness and itching. o-Phenylphenol dust may be severely irritating to eyes with symptoms of redness, tearing, stinging and swelling. Inhalation of the chemical may cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose. o-Phenylphenol may be harmful or fatal if swallowed in sufficient quantities. Symptoms of ingestion include abdominal pain, nausea, vomiting and diarrhea. Severe overexposure may cause nervous system effects (with symptoms of dizziness, headache, lack of coordination, numbness and/or confusion) or respiratory failure.

Long-Term Health Effects

Prolonged vapor contact may cause conjunctivitis. At doses greater than 200 mg/kg/day, o-phenylphenol has been classified as a possible human carcinogen. Genetic toxicity tests have produced ambiguous results.

Physical Hazards

o-Phenylphenol is stable under normal conditions of use. Heating to decomposition may produce carbon monoxide, carbon dioxide and other toxic fumes. Avoid contact with strong acids, oxidizers and bases. Concentrations of dust may be explosive. Exposure to heat, open flames and other potential sources of ignition must be avoided.
Potential Environmental Impact

-o-Phenylphenol is readily biodegradable and degrades rapidly in the presence of sunlight. Releases to water may pose a danger to fish (moderate toxicity), invertebrates (high toxicity) and aquatic plants (moderate toxicity) prior to degradation. The chemical may adsorb to suspended soils and sediments and may accumulate in the tissues of aquatic organisms.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, o-phenylphenol is not expected to pose a significant risk to human health or the environment.

References

*IARC Monograph, Volume 30*, International Agency for Research on Cancer

*International Chemical Safety Card*, International Programme on Chemical Safety (IPCS)

*Safety Data Sheet (SDS), PREVENTOL O EXTRA*, LANXESS Corporation

*MedlinePlus Medical Encyclopedia*, U.S. National Library of Medicine and the National Institutes of Health

*Reregistration Eligibility Decision for 2-phenylphenol and Salts (Orthophenylphenol or OPP)*, U.S. Environmental Protection Agency (EPA)

*ToxNet Hazardous Substance Data Bank*, U.S. National Library of Medicine, National Institutes of Health and the U.S. Department of Health and Human Services

Contact Information

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Notices

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