Material Safety Data Sheet

City University of Hong Kong

MSDS HYDROQUINONE 0408

PRODUCT INFORMATION

Chemical name and Synonyms:
1,4-Dihydroxybenzene; p-Dihydroxybenzene; 1,4-Benzenediol; Dihydroxybenzene; Quinol

Chinese Name: 酚；二氢
CAS No: 123-31-9
Molecular Weight: 110.11
Chemical Formula: C₆H₄(OH)₂

RISK SYMBOL

PHYSICAL DATA

Appearance: White crystals.
Boiling Point: 285°C (545°F)
Odor: Odorless.
Melting Point: 170°C (338°F)
Solubility: 7g/100g water @ 25°C (77°F).
Vapor Density (Air=1): 3.81
Specific Gravity: 1.33 @ 15°C
Vapor Pressure (mm Hg): 4 @ 150°C (302°F)

**FIRE AND EXPLOSION DATA**

Fire:
- Flash point: 165°C (329°F) CC
- Autoignition temperature: 516°C (961°F)
- May pose a fire hazard when exposed to heat, flame, or oxidizing agents.

Explosion:
- Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:
- Dry chemical, alcohol foam or carbon dioxide. Water or foam may cause frothing.

Special Information:
- In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**REACTIVITY DATA**

Stability:
- Stable under ordinary conditions of use and storage. Solution becomes brown in air due to oxidation.

Hazardous Decomposition Products:
- Quinone and oxides of carbon may be formed when this material is heated to decomposition.

Hazardous Polymerization: Will not occur.
- Incompatibilities: Sodium hydroxide, strong alkalis, and oxidizers. Conditions to Avoid: Heat, flame, ignition sources, incompatibles, light, and air.

**HEALTH HAZARD DATA**

Emergency Overview:
- Danger! May be fatal if swallowed. Affects central nervous system. Causes severe skin and eye irritation. Harmful if inhaled. May cause allergic skin reaction. Causes irritation to respiratory tract.

The above information is believed to be accurate to the best of our knowledge.
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Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. Systemic effects have not been proven by this route.

Ingestion:
Highly toxic. May cause hyperactivity, stupor, fall in blood pressure, hyperpnea, abdominal pain, diarrhea, intense thirst, sweating, tinnitus, nausea, dizziness, a sensation of suffocation, an increased rate of respiration, vomiting, pallor, muscular twitching, headache, cyanosis, delirium, and collapse (from respiratory failure). Estimated lethal dose lies between 5 to 12 grams (usually because of respiratory failure from methemoglobin formation which leaves the blood unable to carry oxygen). May cause green to brownish-green urine.

Skin Contact: Causes severe irritation, redness and pain. Alkaline solutions can cause skin sensitization.
Eye Contact: Causes severe irritation and possible corneal ulceration.

Chronic Exposure:
Repeated exposure to vapor or dust (typically 10 to 30 mg/m³) for > 5 years has caused brownish staining of the conjunctiva which may be followed by changes to the cornea leading to loss of visual acuity. Repeated exposure may also cause skin effects.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin or eye disorders or impaired respiratory function may be more susceptible to the effects of this substance.

FIRST AID MEASURES

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:
If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:
Wipe off excess material from skin then immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

PREVENTATIVE MEASURES
Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL): 2 mg/m³ (TWA)
- ACGIH Threshold Limit Value (TLV): 2 mg/m³ (TWA)

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge and dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A gas/vapor cartridge should be used in addition to the particulate filter. If the vapor concentration alone exceeds the exposure limits, use a supplied air respirator, because warning properties are unknown for these compounds.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Handling and Storage:
Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from oxidizing materials. Protect from direct sunlight. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

ENVIRONMENTAL PROTECTION DATA

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.