

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:

ACUTE INHALATION.....: The potassium sulfite, hydroquinone and potassium carbonate in this product are expected to be irritating to the respiratory tract with symptoms of coughing, sore throat, and runny nose. Potassium sulfite may cause an allergic reaction in some asthmatics and sulfite sensitive individuals. Possible symptoms include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure, and anaphylaxis. Inhalation of diethylene glycol vapors is unlikely due to its low vapor pressure. However, if misted or handled at elevated temperatures, high concentrations of diethylene glycol can produce drowsiness, headache, dizziness, and nausea.

CHRONIC INHALATION.....: Persons who have been previously sensitized to sulfites should take precautions to prevent the inhalation of potassium sulfite.

ACUTE SKIN CONTACT.....: Potassium sulfite and hydroquinone can be irritating to the skin with symptoms of reddening, itching, and swelling. Potassium carbonate can be severely irritating with symptoms of reddening, itching, swelling, and possible burns. Hydroquinone may cause skin sensitization with symptoms of rash, itching, hives, and swelling.

CHRONIC SKIN CONTACT.....: Sensitization with dermatitis or hives may occur.

ACUTE EYE CONTACT.....: Potassium sulfite and hydroquinone can be irritating to the eyes with symptoms of tearing, stinging, reddening, and swelling. Potassium carbonate can be severely irritating with possible burns.

CHRONIC EYE CONTACT.....: Repeated exposure to hydroquinone may cause intolerance of the eyes to light. In addition, repeated overexposure to hydroquinone may cause pigment deposition, which can extend into the cornea with continued exposure to high concentrations. This pigment deposition does not impair vision.

ACUTE INGESTION.....: Ingestion of this product may cause gastrointestinal irritation. Ingestion of diethylene glycol can result in behavioral change, drowsiness, kidney and liver failure, and coma. The oral toxicity of diethylene glycol is greater in humans than in laboratory animals. The estimated single lethal dose-oral-human is 1.0 ml/kg. Hydroquinone may be harmful if swallowed with symptoms including nausea, vomiting, drowsiness, dizziness, disorientation, bluish skin color, and stomach pain.

CHRONIC INGESTION.....: None known.

OTHER EFFECTS OF EXPOSURE.....: See Section 11.

CARCINOGENICITY.....: The components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS

AGGRAVATED BY EXPOSURE.....: Persons with preexisting eye, skin, liver, or kidney conditions or impaired pulmonary function may be more susceptible to the effects of this product.

4. FIRST AID MEASURES:

FIRST AID FOR EYES.....: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

FIRST AID FOR SKIN.....: Flush affected areas promptly with water and soap for 15 minutes. Remove contaminated clothing. In case of continued irritation consult physician.

FIRST AID FOR INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

FIRST AID FOR INGESTION.: Drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Seek medical attention. Take this MSDS to physician.

5. FIRE FIGHTING MEASURES:

FLASH POINT.....: Noncombustible

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EXTINGUISHING MEDIA.....: Material is not combustible. Use extinguishing media suitable for other combustible materials in the area.

SPECIAL FIRE FIGHTING PROCEDURES: Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

UNUSUAL FIRE / EXPLOSION HAZARDS: When heated to decomposition emission of toxic fumes of SO2 is possible.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES.....: Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Dike Spill. Prevent liquid from entering sewers, waterways, or low areas. Soak up with sawdust, sand, oil dry or other absorbent material. For disposal see section 13.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE(MIN/MAX): Store between 40 F (4.4 C) and 80 F (26 C). Preferred storage is at 68 F (20 C).

SHELF LIFE.....: N.A.

SPECIAL SENSITIVITY.....: Keep from freezing.

HANDLING/STORAGE PRECAUTIONS: Avoid eye and skin contact, and store in well-ventilated area. Keep container tightly closed. Do not store with incompatible materials. Do not store or consume food, drink or tobacco in area where they may become contaminated with this material. For incompatibles see section 10.

OTHER NOTES.....: Keep out of the reach of children.

8. PERSONAL PROTECTION:

PROTECTIVE CLOTHING REQUIREMENTS...: Splash protection required for eyes, e.g., eye glasses with side shields or goggles. For skin protection use chemical resistant gloves and aprons, e.g. made of neoprene, rubber or vinyl.

VENTILATION REQUIREMENTS.....: Use sufficient general room ventilation and/or local exhaust to maintain airborne levels of vapors below applicable exposure limits (see Section 2).

RESPIRATOR REQUIREMENTS.....: Under normal conditions of use, respirator protection is not required. If respirators are used, institute a program in accordance with OSHA standard 29CFR1010.134.

ADDITIONAL PROTECTIVE MEASURES.....: Emergency showers and eye wash stations should be made available. Educate and train employees in the safe use and handling of this product.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM.....: Liquid

APPEARANCE.....: Clear

COLOR.....: Light Yellow

ODOR.....: Odorless

pH: 11.8

BOILING POINT.....: Approx. 212 F (100 C)

MELTING/FREEZING POINT....: Approx. 32 F (0 C)

SOLUBILITY IN WATER: Soluble

SPECIFIC GRAVITY: 1.35

BULK DENSITY.....: Not Established

% VOLATILE BY WEIGHT.....: Not Established

EVAPORATION RATE: Not Established (Butyl acetate = 1)

VAPOR PRESSURE: Not Established

VAPOR DENSITY: Not Established (Air = 1)

10. STABILITY AND REACTIVITY:

STABILITY.....: This is a stable material.

HAZARDOUS POLYMERIZATION...: Will not occur.

INCOMPATIBILITIES.....: Strong Acids, oxidizers

INSTABILITY CONDITIONS.....: None known.

DECOMPOSITION PRODUCTS.....: In case of fire, oxides of sulfur, CO2, carbon monoxide and other potentially toxic fumes.

11. TOXICOLOGICAL INFORMATION:

TOXICITY DATA FOR: Diethylene Glycol

CHRONIC TOXICITY.....: This product contains diethylene glycol. Repeated ingestion of diethylene glycol over two years produced liver and kidney damage and bladder stones in laboratory rats.1

1 NIOSH-Registry of Toxic Effects of Chemical Substances

TOXICITY DATA FOR: Hydroquinone

ACUTE TOXICITY

ORAL LD50.....: 320 mg/kg (Rat) (1)

SKIN EFFECTS.....: 2% skin - mild (Human); 5% skin - severe (Human) (1)

OTHER ACUTE EFFECTS: Oral-Human LDLO: 29 mg/kg (1)

CHRONIC TOXICITY.....: Adverse kidney effects have been observed primarily in one strain of male rat (F-344) following chronic administration of oral doses. Nephropathy did not occur in two other strains of rats, mice, or dogs. (2)

CARCINOGENICITY.....: Formation of benign kidney tumors occurred only after nephropathy developed and only in one strain of male rat. Additional effects have been reported. Although an increase in leukemia was reported in the female F-344 rat, this result was not reproduced in a subsequent study. There was no evidence of cancer in male mice following chronic oral administration of hydroquinone. Increases in primarily benign tumors were noted in female mice, although this finding was not reproduced in a subsequent study. No tumors were reported in mice following long-term dermal application of hydroquinone. (2)

MUTAGENICITY.....: Studies using the Ames' test were generally negative. There is some evidence for mutagenicity from studies in animals, in isolated cells taken from animals and plants, and in other microorganisms. (2)

DEVELOPMENTAL TOXICITY: Hydroquinone has not caused birth defects when administered orally at dose levels not causing systemic toxicity in the mother. (2)

REPRODUCTION.....: Hydroquinone has not caused reproductive effects in male or female animals when administered orally at dose levels not causing systemic toxicity in the mother. (2)

1 Occupational Health Services Material Safety Data Sheet

2 Hydroquinone Health, Safety, and Environmental Information, Eastman Chemical Company

12. ECOLOGICAL INFORMATION:

NO ECOLOGICAL INFORMATION AVAILABLE

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....: Recover nonusable free liquid and/or contaminated water, and dispose of in an approved and permitted treatment system. Remove nonusable solid material and/or contaminated soil, for disposal in an approved and permitted landfill. Discharge to sewer may require approval of permitting authority and may require pretreatment.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME.....: Aqueous Photochemical Solution

PRODUCT LABEL.....: HD Developer Part A

DOT (DOMESTIC SURFACE)

HAZARD CLASS OR DIVISION: Non-Regulated

IMO / IMDG CODE (OCEAN)

HAZARD CLASS DIVISION NUMBER...: Non-Regulated

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15. REGULATORY INFORMATION:

OSHA STATUS.....: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS.....: On TSCA Inventory

CERCLA REPORTABLE QUANTITY...: Hydroquinone (Reportable Quantity = 100 lbs.)

SARA TITLE III:

SECTION 302 EXTREMELY

HAZARDOUS SUBSTANCES...: Hydroquinone (CAS# 123-31-9) - 5-10%

SECTION 311/312

HAZARD CATEGORIES.....: Immediate Health Hazard; Delayed Health Hazard

SECTION 313

TOXIC CHEMICALS.....: Hydroquinone (CAS# 123-31-9) - 5-10%

RCRA STATUS.....: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
Water		
7732-18-5	45-50 %	PA3, NJ4
Potassium Sulfite		
10117-38-1	15-20 %	PA3, NJ4
Potassium Carbonate		
584-08-7	5-10 %	PA3, NJ4
Diethylene glycol		
111-46-6	5-10 %	PA1, NJ4
Hydroquinone		
123-31-9	5-10 %	PA1, PA4, MA, NJ1, NJ3

MA = Massachusetts Hazardous Substance List
 NJ1 = New Jersey Hazardous Substance List
 NJ3 = New Jersey Special Health Hazardous Substance List
 NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%
 PA1 = Pennsylvania Hazardous Substance List
 PA3 = Pennsylvania Non-hazardous present at 3% or greater.
 PA4 = Pennsylvania Environmental Hazardous Substance List.

16. OTHER INFORMATION:

HMIS RATINGS: Health Flammability Reactivity Personal Prot
 2 0 0 B
 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
 B=Safety Glasses, Gloves

AGFA's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS ratings are provided by AGFA as a customer service.

REASON FOR ISSUE.....: Reviewed, Harmonized
PREPARED BY.....: S. Van Volkenburg
APPROVED BY.....: M. Patrick
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