

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 1/12



## 1. Identification of the substance/mixture and of the company/undertaking

**Product name:** KODAK Industrial X-ray Developer and Replenisher

**Product code:** 7461080

**Synonyms:** None.

**Relevant identified uses of the substance or mixture and uses advised against:**

**Identified uses:** photographic processing chemical

**Supplier:** EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York 14650

IN EMERGENCY, telephone: 1-800-424-9300 or +1 703-527-3887.

For further information about this product, email [us-pep@kodak.com](mailto:us-pep@kodak.com).

## 2. Hazards identification

**Classification of the chemical in accordance with paragraph (d) of 29 CFR 1910.1200:**

Hazard class	Hazard category	Route of exposure
Skin irritation	Category 2	--
Serious eye damage	Category 1	--
Skin sensitisation	Category 1B	--
Germ cell mutagenicity	Category 2	--
Carcinogenicity	Category 2	--
Reproductive toxicant	Category 1B	--
Acute aquatic toxicity	Category 1	--
Chronic aquatic toxicity	Category 1	--

### GHS-Labeling

**Contains:**

Hydroquinone (123-31-9), Potassium hydroxide (1310-58-3), Sodium bromide (7647-15-6)

**Symbol(s):**

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 2/12

---



**Signal word:** Danger

**Hazard statements:** Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. Suspected of causing cancer. May damage fertility or the unborn child. Very toxic to aquatic life with long lasting effects.

**Precautionary statements:**

**Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

**Response:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF exposed or concerned: Get medical advice/ attention. Collect spillage.

**Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulation.

**HMIS IV Hazard Ratings:** Health - 3\*, Flammability - 1, Physical Hazard - 0

**NFPA Hazard Ratings:** Health - 3, Flammability - 1, Instability - 0

NOTE: HMIS IV and NFPA 704 (2007) hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

### 3. Composition/information on ingredients

Weight percent	Components - (CAS-No.)
5 - 10	Hydroquinone (123-31-9)

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 3/12

---

1 - 5 Potassium carbonate (584-08-7)  
1 - < 5 Potassium hydroxide (1310-58-3)  
1 - 5 Sodium bromide (7647-15-6)

## 4. First aid measures

**Inhalation:** If inhaled, remove to fresh air. Get medical attention immediately.

**Eyes:** Immediately flush the contaminated eye(s) with water for at least 60 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Neutral saline solution may be used as soon as it is available. DO NOT INTERRUPT FLUSHING. Contact a physician or poison control center immediately. Continue flushing the eye(s) until the physician advises to stop. If necessary, continue flushing during transport to an emergency care facility.

**Skin:** Wash off immediately with soap and plenty of water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

**Ingestion:** If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Most important symptoms and effects, both acute and delayed:** Serious Eye Damage: Signs/symptoms may include localized redness, swelling, lachrymation, itching, intense pain, ulceration, tissue destruction and loss of vision.  
Gastrointestinal Corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain; nausea; vomiting; and diarrhea; blood in the feces and/or vomitus may also be seen. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching. Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

**Indication of any immediate medical attention and special treatment needed:**

**Treatment:** No information available.

## 5. Firefighting measures

**Extinguishing Media:** Water spray, Dry chemical, Carbon dioxide (CO<sub>2</sub>), Foam.

**Special hazards arising from the substance or mixture**

**Hazardous Combustion Products:** Carbon oxides, potassium oxide

**Special Fire-Fighting Procedures:** Wear self-contained breathing apparatus and protective suit. Fire or excessive heat may produce hazardous decomposition products.

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 4/12

---

**Unusual Fire and Explosion Hazards:** None.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** Refer to protective measures listed in sections 7 and 8.

**Methods and materials for containment and cleaning up:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Environmental precautions:** Prevent runoff from entering drains, sewers, or streams.

**For Large Spills:** Prevent runoff from entering drains, sewers, or streams.

## 7. Handling and storage

### Precautions for safe handling

**Personal precautions:** Do not get in eyes, on skin, or on clothing. Do not breathe vapours or spray mist. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

**Prevention of Fire and Explosion:** Keep from contact with oxidizing materials.

**Ventilation:** Match ventilation rates to conditions of use so as not to exceed any applicable exposure limits (see Section 8).

**Conditions for safe storage, including any incompatibilities:** Keep in a dry, cool and well-ventilated place. Cool conditions (5 - 30°C). Keep container tightly closed. Keep away from food, drink and animal feeding stuffs. Keep away from incompatible substances (see Incompatibility section.)

## 8. Exposure controls/personal protection

### Occupational exposure controls

Chemical name	Regulatory List	Value Type	Value
Hydroquinone	ACGIH	Time weighted average	1 mg/m <sup>3</sup>
Hydroquinone	OSHA	Time weighted average	2 mg/m <sup>3</sup>
		Time weighted average	2 mg/m <sup>3</sup>
		<i>Remarks: also regulated under Dihydroxybenzene</i>	
		Short term exposure limit	4 mg/m <sup>3</sup>

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 5/12

---

Potassium hydroxide ACGIH *Remarks: also regulated under Dihydroxybenzene*  
Ceiling Limit Value 2 mg/m<sup>3</sup>  
Ceiling Limit Value 2 mg/m<sup>3</sup>

**Appropriate engineering controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. Controls should be sufficient so that applicable occupational exposure limits are not exceeded.

## Individual protection measures, such as personal protective equipment

**Eye protection:** Wear safety glasses with side shields (or goggles).

**Hand protection:** Wear protective gloves/ protective clothing.

**Respiratory protection:** If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

## 9. Physical and chemical properties

**Physical form:** liquid

**Colour:** clear colourless to pale yellow

**Odour:** No data available - testing not performed

**Specific gravity:** 1.258

**Vapour pressure:** 23 mbar (17.3 mm Hg)

**Vapour density:** No data available - testing not performed

**Boiling point/boiling range:** 100 °C (212.0 °F)

**Water solubility:** partly soluble

**pH:** 10 - 11

**Flash point:** No data available - testing not performed

**Evaporation rate:** No data available - testing not performed

**Flammability (Solid; gas):** No data available - testing not performed

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 6/12

---

**Upper explosion limit:** No data available - testing not performed

**Lower explosion limit:** No data available - testing not performed

**Partition coefficient: n-octanol/water:** No data available - testing not performed

**Auto-ignition temperature:** No data available - testing not performed

**Decomposition temperature:** No data available - testing not performed

**Viscosity:** No data available - testing not performed

**Explosive properties:** No data available - testing not performed

**Oxidizing properties:** No data available - testing not performed

## 10. Stability and reactivity

**Reactivity:** No data available

**Chemical stability:** Stable under normal conditions.

**Possibility of hazardous reactions:** Hazardous polymerisation does not occur.

**Conditions to avoid:** No data available

**Incompatible materials:** Strong oxidizing agents.

**Hazardous decomposition products:** None under normal conditions of use.

## 11. Toxicological information

### Effects of Exposure

#### General advice:

Contains: Hydroquinone. Suspected of causing cancer. Suspected of causing genetic defects.

**Inhalation:** Airborne dust/mist/vapor may be irritating.

**Eyes:** Causes serious eye damage.

**Skin:** Causes skin irritation.

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 7/12

---

**Ingestion:** May cause burns of the gastrointestinal tract if swallowed.

## Data for Hydroquinone (CAS 123-31-9):

### Acute Toxicity Data:

Oral LD50 (male Rat): 400 mg/kg

- Oral LD50 (male Mouse): 100 - 200 mg/kg
- Dermal LD50 (Guinea pig): > 1,000 mg/kg
- Dermal LD50 (Rabbit): 74,800 mg/kg
- Skin irritation: slight
- Sensitisation (Guinea pig): positive
- Eye irritation: moderate

### Mutagenicity/Genotoxicity Data:

- Salmonella typhimurium assay (Ames test): negative (in presence and absence of activation)
- Chromosomal aberration assay: negative (in absence of activation)
- Chromosomal aberration assay: positive (in presence of activation)
- Sister chromatid exchange (SCE) assay: positive (in presence and absence of activation)

Definitions for the following section(s): LOEL =lowest-observed-effect level, LOAEL = lowest-observed-adverse-effect, NOAEL = no observed-adverse-effect level, NOEL =no-observed-effect level.

### Repeated dose toxicity:

- Dermal (17-day, Rat): NOEL; 3800 mg/kg/day
- Dermal (17-day): Lowest observed effect level; 4800 mg/kg/day

### Developmental Toxicity Data:

- Oral (female Rabbit): NOEL for developmental toxicity; 25mg/kg/day
- Oral (female Rat): NOAEL for developmental toxicity; mg/kg/day

## Data for Potassium carbonate (CAS 584-08-7):

### Acute Toxicity Data:

Oral LD50 (Rat): 1,870 mg/kg

- Inhalation LC50 (Rat): > 4.96 mg/l / 4 hr
- Dermal LD50 (Rat): > 2,000 mg/kg
- Skin irritation: irritating
- Eye irritation: moderate

## Data for Potassium hydroxide (CAS 1310-58-3):

### Acute Toxicity Data:

Oral LD50 (Rat): 273 mg/kg

- Skin irritation: Corrosive

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 8/12

---

- Eye irritation: Corrosive

## Data for Sodium bromide (CAS 7647-15-6):

### Acute Toxicity Data:

- Skin irritation: none
- Sensitisation: none
- Eye irritation: slight

### Carcinogenicity

American Conference of Governmental Industrial Hygienists (ACGIH):	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans: Hydroquinone
International Agency for Research on Cancer (IARC):	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
U.S. National Toxicology Program (NTP):	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
U.S. Occupational Safety and Health Administration (OSHA):	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
California Prop. 65	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 12. Ecological information

The following properties are ESTIMATED from the components of the preparations.

### Potential Toxicity:

Toxicity to fish (LC50):	< 1 mg/l estimated
Toxicity to daphnia (EC50):	< 1 mg/l estimated



# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 9/12

---

**Persistence and degradability:** Not readily biodegradable.

This product has not been tested for environmental effects.

## Bioaccumulative potential

No data available

## Mobility in soil

No information available.

## 13. Disposal considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport information

The information below is provided to assist in documentation. It represents the dangerous goods classification before any regulatory exceptions are taken (e.g. "limited quantity") and therefore may not represent the final classification. The final classification as it pertains to the product packaging configuration (including labeling, marking, and exceptions) may be obtained via the Dangerous Goods Worksheet which can be found at [www.kodak.com/go/ship](http://www.kodak.com/go/ship).

**IATA:** UN number: UN3082  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S. (hydroquinone)  
Class: 9  
Packaging group: III  
Marine Pollutant status: Marine pollutant  
Marine Pollutant(s): hydroquinone

**IMDG:** UN number: UN3082  
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE,  
LIQUID, N.O.S. (hydroquinone)  
Class: 9  
Packaging group: III  
Marine Pollutant status: Marine pollutant  
Marine Pollutant(s): hydroquinone

**US DOT:** UN number: UN3082

# Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 10/12

---

Proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (hydroquinone)
Class:	9
Packaging group:	III
Marine Pollutant status:	Marine pollutant
Marine Pollutant(s):	hydroquinone
Reportable Quantity:	hydroquinone
Reportable Quantity:	100 lb

For more transportation information, go to: [www.kodak.com/go/ship](http://www.kodak.com/go/ship).

## 15. Regulatory information

### Notification status

Regulatory List	Notification status
TSCA	Not all listed
DSL	Not all listed
NDSL	None listed
EINECS	Not all listed
ELINCS	None listed
NLP	None listed
AIC	Not all listed
IECS	Not all listed
ENCS	Not all listed
ECI	Not all listed
NZIoC	Not all listed
PICCS	Not all listed
TCSI	All listed

"Not all listed" indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

### Other regulations

U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Hydroquinone , Potassium hydroxide
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355	Hydroquinone

## Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 11/12

---

Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):

U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting):	Hydroquinone
U.S. - California - 8 CCR Section 339 - Director's List of Hazardous Substances:	Hydroquinone , Potassium hydroxide
U.S. - California - 8 CCR Section 5200-5220 - Specifically Regulated Carcinogens:	No components found on the California Specifically Regulated Carcinogens List.
U.S. - California - 8 CCR Section 5203 Carcinogens:	No components found on the California Section 5203 Carcinogens List.
U.S. - California - 8 CCR Section 5209 Carcinogens:	No components found on the California Section 5209 Carcinogens List.
U.S. - Massachusetts - General Law Chapter 111F (MGL c 111F) - Hazardous Substances Disclosure by Employers (a.k.a. Right to Know Law):	Hydroquinone , Potassium hydroxide
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	Hydroquinone , Potassium hydroxide
U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	Hydroquinone , Potassium hydroxide
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Water , Potassium sulphite , Hydroquinone , Potassium hydroxide

### 16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

#### US/Canadian Label Statements:

#### KODAK Industrial X-ray Developer and Replenisher

##### Contains:

Hydroquinone (123-31-9), Potassium hydroxide (1310-58-3), Sodium bromide (7647-15-6)

##### Symbol(s):

## Safety Data Sheet

Revision Date: 03/12/2021  
000000059808/Version: 1.2  
Print Date: 04/21/2021  
Page: 12/12

---



**Signal word:** Danger

**Hazard statements:** Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. Suspected of causing genetic defects. Suspected of causing cancer. May damage fertility or the unborn child. Very toxic to aquatic life with long lasting effects.

**Precautionary statements:**

**Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment.

**Response:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/ attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF exposed or concerned: Get medical advice/ attention. Collect spillage.

**Disposal:** Dispose of contents/container in accordance with local/regional/national/international regulation.

---

This Safety Data Sheet has been compiled and is solely intended for this product. The information is based upon the present state of our knowledge.

---

R-2, S-3, F-1, C-0 CARC REPO