

# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 1/10

**Kodak** alaris

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

**Product name:** D-76 DEVELOPER, Working Solution

**Product code:** 10098074F - Working Solution

**Supplier:** Kodak Alaris Inc., 2400 Mount Read Boulevard, Rochester, NY 14615

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

For further information about this product, email [EHS-Questions@Kodakalaris.com](mailto:EHS-Questions@Kodakalaris.com).

**Synonyms:** None.

**Product Use:** photographic processing chemical (developer/activator), For industrial use only.

## 2. Hazards identification

**CONTAINS:** Hydroquinone (123-31-9), Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0), Sodium tetraborate (1330-43-4)

### WARNING!

**CAUSES EYE IRRITATION**

**MAY CAUSE ALLERGIC SKIN REACTION**

**POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA**

**CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS - SUCH AS BIRTH DEFECTS, MISCARRIAGES, OR INFERTILITY**

**HMIS III Hazard Ratings:** Health - 2\*, Flammability - 0, Physical Hazard - 0

**NFPA Hazard Ratings:** Health - 2, Flammability - 0, Instability - 0

NOTE: HMIS III 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	Sodium sulphite (7757-83-7)

# Material Safety Data Sheet

Revision Date: 30.07.2015

000000025621/Version: 2.0

Print Date: 25.08.2015

Page: 2/10

0.1 - < 1 Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0)

0.1 - < 0.5 Hydroquinone (123-31-9)

0.1 - < 0.5 Sodium tetraborate (1330-43-4)

## 4. First aid measures

**Inhalation:** If symptomatic, move to fresh air. Get medical attention if symptoms occur.

**Eyes:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention.

**Skin:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

**Ingestion:** If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur.

## 5. Firefighting measures

**Extinguishing Media:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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

**Hazardous Combustion Products:** None (noncombustible), (see also Hazardous Decomposition Products sections.)

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

## 6. Accidental release measures

Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Prevent runoff from entering drains, sewers, or streams.

## 7. Handling and storage

**Personal precautions:** Avoid breathing mist or vapour. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

**Prevention of Fire and Explosion:** No special technical protective measures required.

# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 3/10

---

**Storage:** Keep container tightly closed. 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>

**Ventilation:** 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.

**Respiratory protection:** If engineering controls do not maintain airborne concentrations to an acceptable level, 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.

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

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

## 9. Physical and chemical properties

**Physical form:** liquid

**Colour:** colourless

**Odour:** slight

**Specific gravity:** 1.08 - 1.09

**Vapour pressure:** 24 mbar (18.0 mm Hg)

**Vapour density:** 0.6

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

**Water solubility:** complete

**pH:** 8.5

# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 4/10

---

**Flash point:** does not flash

## 10. Stability and reactivity

**Stability:** Stable under normal conditions.

**Incompatibility:** Acids. Contact with strong acids liberates sulphur dioxide.

**Hazardous decomposition products:** Sulphur oxides

**Hazardous Polymerization:** Hazardous polymerisation does not occur.

## 11. Toxicological information

### Effects of Exposure

#### General advice:

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

Contains: Bis(4-hydroxy-N-methylanilinium) sulphate. Based on animal data, may cause adverse effects on the following organs/systems: blood, kidney, spleen. Based on animal data this material can produce methemoglobin which, in sufficient concentration, causes cyanosis, a blue-gray discoloration of the skin and lips caused by a reduced ability of the blood to carry oxygen.

Contains: Sodium tetraborate. Based on repeated-dose ingestion studies in animals, may cause adverse reproductive and developmental effects.

**Inhalation:** Expected to be a low hazard for recommended handling. In contact with strong acids or if heated, sulphites may liberate sulphur dioxide gas. Sulphur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.

**Eyes:** May cause transient irritation.

**Skin:** May cause allergic skin reaction.

**Ingestion:** Expected to be a low hazard for recommended handling. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

### Data for Sodium sulphite (CAS 7757-83-7):

#### Acute Toxicity Data:

# Material Safety Data Sheet

Revision Date: 30.07.2015

000000025621/Version: 2.0

Print Date: 25.08.2015

Page: 5/10

---

Oral LD50 (Rat): 820 mg/kg

- Inhalation LC50 (Rat): > 22 mg/l / 1 hr
- Skin irritation: none
- Eye irritation: slight; washing palliative

## 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
- Oral LD50 (Rat): 298 mg/kg
- Dermal LD50 (Guinea pig): > 1,000 mg/kg
- Dermal LD50 (Rabbit): 74,800 mg/kg
- Skin irritation: slight
- Skin Sensitization (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 Bis(4-hydroxy-N-methylanilinium) sulphate (CAS 55-55-0):

### Acute Toxicity Data:

Oral LD50 (Rat): 237 mg/kg

- Oral LD50 (Mouse): 565 mg/kg
- Dermal LD50 (Guinea pig): > 1,000 mg/kg (highest dose tested)
- Skin irritation: slight
- Skin irritation: slight to moderate (repeated skin application)
- Skin Sensitization: positive
- Eye irritation (unwashed eyes): moderate to strong

# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 6/10

---

- Eye irritation (washed eyes): slight

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:

- Oral (11 days): Lowest observed effect level; 1.0 % in diet (reduced feed intake, reduced body weight gain, target organ effects: red blood cell)
- Oral (11 days): NOEL; 0.1 % in diet

#### Data for Sodium tetraborate (CAS 1330-43-4):

##### Acute Toxicity Data:

Oral LD50 (Rat): 2,403 mg/kg

- Oral LD50 (Rat): 2,660 mg/kg
- Dermal LD50 (Rabbit): > 2,000 mg/kg

## 12. Ecological information

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

#### Potential Toxicity:

Toxicity to fish (LC50): 1 - 10 mg/l

Toxicity to daphnia (EC50): 10 - 100 mg/l

**Persistence and degradability:** Readily biodegradable

## 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

Not regulated for all modes of transportation.

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

## 15. Regulatory information

# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 7/10

---

## Notification status

Regulatory List	Notification status
TSCA	All listed
DSL	All listed
NDSL	None listed
EINECS	All listed
ELINCS	None listed
NLP	None listed
AICS	All listed
IECS	All listed
ENCS	All listed
ECI	All listed
NZIoC	All listed
PICCS	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.

**WHMIS (Canada):** D2A, D2B

**WHMIS Symbol(s):**



## Other regulations

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.

## Material Safety Data Sheet

Revision Date: 30.07.2015

000000025621/Version: 2.0

Print Date: 25.08.2015

Page: 8/10

---

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.
U.S. - CERCLA/SARA (40 CFR § 302.4 Designation of hazardous substances):	Hydroquinone
U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities):	Hydroquinone
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:	No components found on the California Director's List of Hazardous Substances.
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):	No components regulated under the Massachusetts Hazardous Substances Disclosure by Employers Law.
U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):	No components found on the Minnesota Employee Right-to-Know List of Hazardous Substances.



# Material Safety Data Sheet

Revision Date: 30.07.2015  
000000025621/Version: 2.0  
Print Date: 25.08.2015  
Page: 9/10

---

U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):	No components regulated under the New Jersey Worker and Community Right-to-Know Act.
U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):	Water , Sodium sulphite , Hydroquinone

## 16. Other information

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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:

#### D-76 DEVELOPER, Working Solution

**CONTAINS:** Hydroquinone (123-31-9) , Bis(4-hydroxy-N-methylanilinium) sulphate (55-55-0) , Sodium tetraborate (1330-43-4).

**WARNING! CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. POSSIBLE CANCER HAZARD - MAY CAUSE CANCER BASED ON ANIMAL DATA. CAN CAUSE ADVERSE REPRODUCTIVE EFFECTS - SUCH AS BIRTH DEFECTS, MISCARRIAGES, OR INFERTILITY.**

Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling. **FIRST AID:** If symptomatic, move to fresh air. Get medical attention if symptoms occur. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention. In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes. If swallowed, DO NOT induce vomiting. Get medical attention if symptoms occur. Keep out of reach of children. Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood. Since emptied containers retain product residue, follow label warnings even after container is emptied. **IN CASE OF FIRE:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. **IN CASE OF SPILL:** Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Prevent runoff from entering drains, sewers, or streams.

**WHMIS (Canada):** D2A, D2B

**WHMIS Symbol(s):**



## Material Safety Data Sheet

Revision Date: 30.07.2015

000000025621/Version: 2.0

Print Date: 25.08.2015

Page: 10/10

---

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

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