SAFETY DATA SHEET

1. Identification

Product identifier                  Dektol Developer

Other means of identification

SDS number                        PCD 224

Product code                       1058296

Recommended use                   Photographic processing chemical. (developer/activator).

Recommended restrictions          For industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Supplier                          Kodak Alaris Inc

Address                           336 Initiative Drive

Rochester, NY 14624

E-mail                             EHS-Questions@Kodakalaris.com

Emergency telephone number        1-800-424-9300 OR +1 703-741-5970

2. Hazard(s) identification

Physical hazards                   Not classified.

Health hazards

Acute toxicity, oral               Category 4

Serious eye damage/eye irritation  Category 1

Sensitization, skin               Category 1

Germ cell mutagenicity             Category 2

Carcinogenicity                   Category 2

Reproductive toxicity             Category 1B

Specific target organ toxicity, repeated exposure Category 2 (Blood, kidney)

Environmental hazards             Not classified.

OSHA defined hazards               Not classified.

Label elements

Signal word                        Danger

Hazard statement                   Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. Suspected of causing genetic defects. Suspected of causing cancer. May damage fertility or the unborn child. May cause damage to organs (Blood, kidney) through prolonged or repeated exposure.

Precautionary statement

Prevention                         Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response                           If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of water. 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 skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Storage                           Store locked up.
Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)
None known.

Supplemental information
None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium carbonate, monohydrate</td>
<td>5968-11-6</td>
<td>50 - 55</td>
<td></td>
</tr>
<tr>
<td>Sodium sulphite</td>
<td>7757-83-7</td>
<td>30 - 35</td>
<td></td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>123-31-9</td>
<td>5 - 10</td>
<td></td>
</tr>
<tr>
<td>Bis(4-hydroxy-N-methylanilinium) sulphate</td>
<td>55-55-0</td>
<td>1 - 5</td>
<td></td>
</tr>
<tr>
<td>Potassium bromide</td>
<td>7758-02-3</td>
<td>1 - 5</td>
<td></td>
</tr>
<tr>
<td>Boric anhydride</td>
<td>1303-86-2</td>
<td>0.1 - 1</td>
<td></td>
</tr>
</tbody>
</table>

All concentrations are in percent by weight. Chemical ranges are provided in lieu of exact percentages, which are withheld as trade secrets.

4. First-aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Eye contact
Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause an allergic skin reaction. Dermatitis. Rash. Edema. Prolonged exposure may cause chronic effects.

Most important symptoms/effects, acute and delayed
Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Indication of immediate medical attention and special treatment needed
IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical
During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters
Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Fire fighting equipment/instructions
Use water spray to cool unopened containers.

Specific methods
Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards
No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric anhydride</td>
<td>PEL</td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>PEL</td>
<td>2 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**US. ACGIH Threshold Limit Values**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric anhydride</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>TWA</td>
<td>1 mg/m³</td>
</tr>
</tbody>
</table>

**US. NIOSH: Pocket Guide to Chemical Hazards**

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric anhydride</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>Ceiling</td>
<td>2 mg/m³</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

**Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection**

Wear appropriate chemical resistant gloves.

**Other**

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards**

Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations**

Observe any medical surveillance requirements. Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.
9. Physical and chemical properties

Appearance
- Physical state: Solid.
- Form: Powder.
- Color: White
- Odor: Odorless.

Odor threshold: Not available.
P H: Not available.
Melting point/freezing point: Not available.
Initial boiling point and boiling range: Not available.
Flash point: Not available.
Evaporation rate: Not available.
Flammability (solid, gas): Not available.

Upper/lower flammability or explosive limits
- Flammability limit - lower (%): Not available.
- Flammability limit - upper (%): Not available.
- Explosive limit - lower (%): Not available.
- Explosive limit - upper (%): Not available.

Vapor pressure: Not available.
Vapor density: Not available.
Relative density: Not available.

Solubility(ies)
- Solubility (water): Appreciable.
- Partition coefficient (n-octanol/water): Not available.

Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.

Other information
- Explosive properties: Not explosive.
- Oxidizing properties: Not oxidizing.

10. Stability and reactivity

Reactivity
The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability
Material is stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization does not occur.

Conditions to avoid
Contact with incompatible materials.

Incompatible materials
Acids. Contact with strong acids may liberate sulphur dioxide.

Hazardous decomposition products
Carbon oxides. Sulfur oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation
May cause irritation to the respiratory system. 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 difficulty breathing.

Skin contact
May be irritating to the skin. May cause an allergic skin reaction.

Eye contact
Causes serious eye irritation.
Ingestion
Harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics
Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Edema.

Information on toxicological effects

Acute toxicity
Harmful if swallowed.

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boric anhydride (CAS 1303-86-2)</td>
<td></td>
</tr>
<tr>
<td>Acute Dermal</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rabbit</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Mouse</td>
</tr>
<tr>
<td>Sodium carbonate, monohydrate (CAS 5968-11-6)</td>
<td></td>
</tr>
<tr>
<td>Acute Inhalation</td>
<td></td>
</tr>
<tr>
<td>LC50</td>
<td>Rat</td>
</tr>
<tr>
<td>Oral</td>
<td></td>
</tr>
<tr>
<td>LD50</td>
<td>Rat</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Prolonged skin contact may cause temporary irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitization

ACGIH sensitization
HYDROQUINONE (CAS 123-31-9) Dermal sensitization
Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity
Suspected of causing genetic defects.

Carcinogenicity
IARC Monographs. Overall Evaluation of Carcinogenicity
Hydroquinone (CAS 123-31-9) 3 Not classifiable as to carcinogenicity to humans.
Sodium sulphite (CAS 7757-83-7) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens
Not listed.

Reproductive toxicity
This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure
Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure
May cause damage to organs (Blood, kidney) through prolonged or repeated exposure.

Aspiration hazard
Not an aspiration hazard.

Chronic effects
May cause damage to organs through prolonged or repeated exposure. Prolonged inhalation may be harmful.

Ecotoxicity
Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Components</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone (CAS 123-31-9)</td>
<td></td>
</tr>
<tr>
<td>Aquatic</td>
<td></td>
</tr>
<tr>
<td>Crustacea</td>
<td>EC50</td>
</tr>
</tbody>
</table>
### Persistence and degradability

Not readily biodegradable.

### Bioaccumulative potential

**Partition coefficient n-octanol / water (log Kow)**

<table>
<thead>
<tr>
<th>Substance</th>
<th>log Kow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>0.59</td>
</tr>
</tbody>
</table>

### Mobility in soil

No data available.

### Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

**Disposal instructions**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazardous waste code**

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

**DOT**

- **UN number**: UN3077
- **UN proper shipping name**: Environmentally hazardous substances, solid, n.o.s. (Hydroquinone RQ = 1672 LBS, Bis(4-hydroxy-N-methylanilinium) sulphate)

**Transport hazard class(es)**

- **Class**: 9
- **Subsidiary risk**: -
- **Label(s)**: 3

**Packing group**: III

**Special precautions for user**

Read safety instructions, SDS and emergency procedures before handling.

**Special provisions**

8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33

**Packaging exceptions**: 155

**Packaging non bulk**: 213

**Packaging bulk**: 240

**IATA**

- **UN number**: UN3077
- **UN proper shipping name**: Environmentally hazardous substance, solid, n.o.s. (Hydroquinone, Bis(4-hydroxy-N-methylanilinium) sulphate)

**Transport hazard class(es)**

- **Class**: 9
- **Subsidiary risk**: -

**Packing group**: III

**Environmental hazards**: Yes

**ERG Code**: 9L

**Special precautions for user**

Read safety instructions, SDS and emergency procedures before handling.

**Other information**

- **Passenger and cargo aircraft**: Allowed with restrictions.
- **Cargo aircraft only**: Allowed with restrictions.

**IMDG**

- **UN number**: UN3077
- **UN proper shipping name**: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Hydroquinone, Bis(4-hydroxy-N-methylanilinium) sulphate)
Transport hazard class(es)

Class 9
Subsidiary risk -
Packing group III

Environmental hazards
Marine pollutant MARINE POLLUTANT
EmS F-A, S-F

Special precautions for user
Read safety instructions, SDS and emergency procedures before handling.
Hydroquinone, Bis(4-hydroxy-N-methylanilinium) sulphate
Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
DOT; IATA; IMDG

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)
Hydroquinone (CAS 123-31-9) Listed.

SARA 304 Emergency release notification
Hydroquinone (CAS 123-31-9) 100 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
SARA 302 Extremely hazardous substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>Reportable quantity (pounds)</th>
<th>Threshold planning quantity, lower value (pounds)</th>
<th>Threshold planning quantity, upper value (pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>123-31-9</td>
<td>100</td>
<td>500</td>
<td>10000</td>
</tr>
</tbody>
</table>
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation
Respiratory or skin sensitization
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

SARA 313 (TRI reporting)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS number</th>
<th>% by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroquinone</td>
<td>123-31-9</td>
<td>5 - 10</td>
</tr>
</tbody>
</table>

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Hydroquinone (CAS 123-31-9)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

US state regulations

California Proposition 65
California Safe Drinking Water and Toxic Enforcement Act of 2016 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))
Boric anhydride (CAS 1303-86-2)

International Inventories

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>No</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Taiwan</td>
<td>Taiwan Chemical Substance Inventory (TCSI)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date: 05-15-2019
Version #: 01

HMIS® ratings
Health: 3*
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 3
Flammability: 0
Instability: 0
NFPA ratings

List of abbreviations

IARC Monographs. Overall Evaluation of Carcinogenicity
CAS: Chemical Abstract Service.
PBT: Persistent, bioaccumulative, toxic.
vPvB: very Persistent, very Bioaccumulative.
DNEL: Derived No Effect Level.
PNEC: Predicted No Effect Concentration.
TWA: Time Weighted Average.
STEL: Short-term Exposure Limit.
LD50: Lethal Dose 50%.
LC50: Lethal Concentration 50%.
EC50: Effective Concentration 50%.

Disclaimer

Kodak Alaris cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user’s responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Revision information

Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group
Regulatory Information: Other
GHS: Qualifiers