SAFETY DATA SHEET
PHENISOL High Contrast Film Developer

1. IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>PHENISOL High Contrast Film Developer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product No.</td>
<td>1757635</td>
</tr>
<tr>
<td>Internal Id</td>
<td>10026</td>
</tr>
<tr>
<td>Container Size</td>
<td>5 Liter</td>
</tr>
<tr>
<td>Identification No.</td>
<td>3082</td>
</tr>
<tr>
<td>Identified uses</td>
<td>Developer Solution</td>
</tr>
<tr>
<td>Supplier</td>
<td>Distributors</td>
</tr>
<tr>
<td>USA: WYNIT Inc, 5801 East Taft Road, North Syracuse, NY 13212. Tel: 1 800 GO WYNIT (469 9648) or 1 315 437 4167, Fax: 1 315 437 0432</td>
<td></td>
</tr>
<tr>
<td>Canada: Amplis Foto Inc, 22 Telson Road, Markham, Ontario L3R 1E5, Tel: 905 477 4111, Fax: 905 477 2502</td>
<td></td>
</tr>
<tr>
<td>Contact Person</td>
<td>USA: <a href="mailto:ilfordhelp@wynit.com">ilfordhelp@wynit.com</a>; Canada: <a href="mailto:phil.nielsen@amplis.com">phil.nielsen@amplis.com</a></td>
</tr>
<tr>
<td>Emergency Telephone</td>
<td>USA/Canada: For medical emergency, call 1 800 842 9660 (Product Misuse).</td>
</tr>
</tbody>
</table>

2. HAZARD(S) IDENTIFICATION

**Appearance** Clear liquid.

**Color** Colourless to pale yellow.

**Odor** No characteristic odor.

**GHS Pictogram**

- Signal Word: Danger
- Hazard Statements:
  - H317: May cause an allergic skin reaction.
  - H318: Causes serious eye damage.
  - H341: Suspected of causing genetic defects.
  - H351: Suspected of causing cancer.
  - H400: Very toxic to aquatic life.
- Precautionary Statements:
  - P273: Avoid release to the environment.
  - P280: Wear protective clothing, gloves, eye and face protection.
  - P302+352: IF ON SKIN: Wash with plenty of soap and water.
  - P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P405: Store locked up.
  - P501: Dispose of contents/container in accordance with local regulations.
- Contains HYDROQUINONE
- GHS Classification Physical and Chemical Hazards Not classified.
PHENISOL High Contrast Film Developer

Human health
Eye Dam. 1 - H318; Skin Sens. 1 - H317; Muta. 2 - H341; Carc. 2 - H351

Environment
Aquatic Acute 1 - H400

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM - WHMIS

WHMIS Label

Controlled Product Classification
This Product has been classified according to the hazard criteria of the Controlled Products Regulations and the MSDS contains all required information.

Inhalation
May cause irritation to the respiratory system.

Ingestion
Harmful if swallowed. May cause discomfort if swallowed.

Skin Contact
Irritating to skin. May cause sensitization by skin contact. May cause allergic contact eczema.

Eye Contact
Irritation of eyes and mucous membranes. Repeated exposure may cause chronic eye irritation.

Health Warnings
Spray and vapor in the eyes may cause irritation and smarting. May cause allergy. May cause hypersensitivity. Prolonged or repeated exposure may cause severe irritation. May cause skin irritation/eczema. May cause sensitization by skin contact. Irritating to eyes.

Route Of Entry
Ingestion. Skin and/or eye contact.

Medical Considerations
May aggravate existing: Skin disorders and allergies. Pre-existing eye problems.

Other Health Effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>1-PHENYL-3-PYRAZOLIDONE</th>
<th>&lt; 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 92-43-3</td>
<td></td>
</tr>
<tr>
<td>EC No.: 202-155-1</td>
<td></td>
</tr>
<tr>
<td>GHS Classification</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4 - H302; Aquatic Chronic 2 - H411</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HYDROQUINONE</th>
<th>1-5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS No.: 123-31-9</td>
<td></td>
</tr>
<tr>
<td>EC No.: 204-617-8</td>
<td></td>
</tr>
<tr>
<td>GHS Classification</td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 4 - H302; Eye Dam. 1 - H318; Skin Sens. 1 - H317; Muta. 2 - H341; Carc. 2 - H351; Aquatic Acute 1 - H400</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Potassium Bromide</th>
<th>1-5%</th>
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<tbody>
<tr>
<td>CAS No.: 7758-02-3</td>
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<tr>
<td>EC No.: 231-830-3</td>
<td></td>
</tr>
<tr>
<td>GHS Classification</td>
<td></td>
</tr>
<tr>
<td>Eye Irrit. 2 - H319</td>
<td></td>
</tr>
</tbody>
</table>
4. FIRST-AID MEASURES

Description of first aid measures

**Inhalation**
Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

**Ingestion**
Rinse mouth thoroughly. Get medical attention if any discomfort continues.

**Skin Contact**
Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Contact physician if irritation continues.

**Eye Contact**
Remove victim immediately from source of exposure. Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Contact physician if irritation persists.

Most important symptoms and effects, both acute and delayed

**Inhalation**
No specific symptoms noted.

**Ingestion**
No specific symptoms noted.

**Skin Contact**
May cause skin sensitisation.

**Eye Contact**
Irritation of eyes and mucous membranes.

Indication of any immediate medical attention and special treatment needed

Notes To The Physician
No specific first aid measures noted.

5. FIRE-FIGHTING MEASURES

**Extinguishing Media**
The product is non-combustible. Use extinguishing media appropriate for surrounding fire.

**Unusual Fire & Explosion Hazards**
No unusual fire or explosion hazards noted.

**Specific Hazards**
The product is non-combustible. If heated, harmful vapors may be formed.

**Special Fire Fighting Procedures**
Avoid breathing fire vapors.

**Protective Equipment For Fire-Fighters**
Use protective equipment appropriate for surrounding materials. Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace.

6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions**
Wear protective clothing as described in Section 8 of this material safety data sheet. Avoid contact with skin and eyes. Provide adequate ventilation.

**Environmental Precautions**
Do not discharge into drains, water courses or onto the ground. The product should not be dumped in nature but collected and delivered according to agreement with the local authorities.
Spill Clean Up Methods
For waste disposal, see section 13. Small quantities may be flushed to drains with plenty of water. Prevent discharge of larger quantity to drain. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Wash contaminated area with water. Do not let washing down water contaminate ponds or waterways.

Reference to other sections
For personal protection, see section 8. For waste disposal, see section 13.

7. HANDLING AND STORAGE

Handling
Provide good ventilation. Avoid spilling, skin and eye contact. Do not eat, drink or smoke when using the product. Read and follow manufacturer's recommendations.

Storage
Store in closed original container in a dry place. Store under well-ventilated conditions at a temperature below 25°C.

Storage Class
Chemical storage.

Specific end use(s)
The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>STD</th>
<th>TWA (8-hrs)</th>
<th>STEL (15 min)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROQUINONE</td>
<td>ACGIH</td>
<td>1 mg/m³</td>
<td></td>
<td>A3, Sen</td>
</tr>
<tr>
<td>HYDROQUINONE</td>
<td>PEL</td>
<td>2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>PEL</td>
<td>2 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>PEL</td>
<td>2 mg/m³</td>
<td></td>
<td>C</td>
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<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>IDLH</th>
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<tbody>
<tr>
<td>HYDROQUINONE</td>
<td>50 mg/m³</td>
</tr>
<tr>
<td>SODIUM HYDROXIDE</td>
<td>10 mg/m³</td>
</tr>
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</table>

ACGIH = American Conference of Governmental Industrial Hygienists.
A3: Confirmed Animal Carcinogen with Unknown Relevance to Humans.
SEN: Sensitizer.
Ceiling limit

Protective Equipment

Engineering Measures
Provide adequate ventilation. Must not be handled in confined space without sufficient ventilation.

Respiratory Equipment
Respiratory protection not required.

Hand Protection
Use protective gloves.

Eye Protection
Use eye protection.

Other Protection
Wear suitable protective clothing as protection against splashing or contamination.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Clear liquid.

Color
Colourless to pale yellow.
PHENISOL High Contrast Film Developer

Odor  
No characteristic odor.

Solubility  
100% Soluble in water.

Initial boiling point and boiling range  
>100 760 mm Hg

Relative density  
1.235 20

pH-Value, Conc. Solution  
10

10. STABILITY AND REACTIVITY

Reactivity
No specific reactivity hazards associated with this product.

Stability
Stable under the prescribed storage conditions. No particular stability concerns.

Hazardous Polymerisation
Will not polymerise.

Conditions To Avoid
Avoid excessive heat for prolonged periods of time. Avoid contact with acids.

Materials To Avoid
Strong acids. Avoid contact with other photographic solutions and/or cleaning compounds.

Hazardous Decomposition Products
Fire or high temperatures create: Sulfurous gases (SOx).

11. TOXICOLOGICAL INFORMATION

Toxicological information
This chemical formulation has not been tested for health effects. Exposure effects listed are based on existing health data for the individual components that comprise the mixture.

Other Health Effects

Toxicological Information on Ingredients:

**HYDROQUINONE (CAS: 123-31-9)**

Toxic Dose 1 - LD 50  
320 mg/kg (oral rat)

Toxic Dose 2 - LD 50  
>900 mg/kg (skin-rat)

**1-PHENYL-3-PYRAZOLIDONE (CAS: 92-43-3)**

Toxic Dose 1 - LD 50  
200 mg/kg (oral rat)

**Diethylenetriamine Pentaacetic Acid Na5 (CAS: 140-01-2)**

Toxic Dose 1 - LD 50  
>4000 mg/kg (oral rat)

**Potassium Carbonate (CAS: 584-08-7)**

Toxic Dose 1 - LD 50  
2570 mg/kg (oral-mouse)

Toxic Dose 2 - LD 50  
1870 mg/kg (oral rat)

12. ECOLOGICAL INFORMATION

Toxicity
The product contains a substance that is very toxic to aquatic organisms.

Degradability
There are no data on the degradability of this product.

Bioaccumulative potential
No data available on bioaccumulation.

Mobility:
The product is soluble in water.
Results of PBT and vPvB assessment
This product does not contain any PBT or vPvB Substances.

Other adverse effects
None known.

Ecological Information on Ingredients:

**HYDROQUINONE (CAS: 123-31-9)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Endpoint</th>
<th>Value (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish</td>
<td>0.10-0.18</td>
<td>(Fathead Minnow)</td>
</tr>
<tr>
<td>EC 50, 48 Hrs, Daphnia</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>IC 50, 72 Hrs, Algae</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

**1-PHENYL-3-PYRAZOLIDONE (CAS: 92-43-3)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Endpoint</th>
<th>Value (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish</td>
<td>&gt;1</td>
<td></td>
</tr>
</tbody>
</table>

**Diethylenetriamine Pentaacetic Acid Na5 (CAS: 140-01-2)**

<table>
<thead>
<tr>
<th>Test</th>
<th>Endpoint</th>
<th>Value (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC 50, 96 Hrs, Fish</td>
<td>&gt;1000 (lepomis macrochirus)</td>
<td></td>
</tr>
<tr>
<td>EC 50, 48 Hrs, Daphnia</td>
<td>&gt;500 (daphnia magna)</td>
<td></td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Used, diluted, and spent solutions may be allowed to be discharged to sanitary sewer by permit IF allowed by local regulations. Consult your local authority for advice. Waste may have to be pre-treated before discharge. Consult local authorities before discharging any waste to sewer. Do not discharge to septic system. Waste that cannot be discharged to sewer may have to handled by a licensed hazardous waste contractor.

14. TRANSPORT INFORMATION

General
Limited Quantity Exemption. No labeling or placarding required for land and air transport within the USA under 49CFR 171.4 or for land transport within Canada under SOR/2008-34.

UN No. (DOT/TDG) 3082
UN No. (IMDG) 3082
UN No. (ICAO) 3082

DOT Proper Shipping Name UN3082, Environmentally hazardous substance, liquid, n.o.s. (contains hydroquinone).

TDG Proper Shipping Name UN3082, Environmentally hazardous substance, liquid, n.o.s. (contains hydroquinone).

IMDG Class 9
ICAO Class 9

Transport Labels

<table>
<thead>
<tr>
<th>IMDG Pack Group</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Pack Group</td>
<td>III</td>
</tr>
</tbody>
</table>

Environmentally Hazardous Substance/Marine Pollutant
15. REGULATORY INFORMATION

Regulatory Status (US)
TSCA: The ingredients of this product are on the TSCA Inventory.

US Federal Regulations

SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities
The following ingredients are listed.
HYDROQUINONE; EPCRA 302 TPQ 10,000 lbs 500 lbs Tier II TPQ 500 lbs

CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)
The following ingredients are listed.
HYDROQUINONE; 100 lbs (45.4 Kg)
SODIUM HYDROXIDE; 1,000 lbs (454 Kg)

SARA Extremely Hazardous Substances EPCRA Reportable Quantities
None of the ingredients are listed.

SARA 313 Emission Reporting
The following ingredients are listed.
HYDROQUINONE 4.39%

CAA Accidental Release Prevention
None of the ingredients are listed.

OSHA Highly Hazardous Chemicals
None of the ingredients are listed.

US State Regulations

State Regulations Comments
No information available.

California Proposition 65 Carcinogens and Reproductive Toxins
None of the ingredients are listed.

California Air Toxics "Hot Spots" (A-I)
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE

California Air Toxics "Hot Spots" (A-II)
None of the ingredients are listed.

Massachusetts "Right To Know" List
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE

Rhode Island "Right To Know" List
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE

Minnesota "Right To Know" List
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE
New Jersey “Right To Know” List
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE

Pennsylvania “Right To Know” List
The following ingredients are listed.
HYDROQUINONE
SODIUM HYDROXIDE

International Inventories

Canada – DSL/NDSL
The following ingredients are listed.
1-PHENYL-3-PYRAZOLIDONE
1-Phenyl-5-mercaptotetrazole
HYDROQUINONE
Potassium Bromide
Potassium Carbonate
SODIUM HYDROXIDE

US - TSCA
The following ingredients are listed.
1-PHENYL-3-PYRAZOLIDONE
1-Phenyl-5-mercaptotetrazole
HYDROQUINONE
Potassium Bromide
Potassium Carbonate
SODIUM HYDROXIDE

US – TSCA 12(b) Export Notification
None of the ingredients are listed.

16. OTHER INFORMATION

General Information
HARMAN technology Ltd believe the information and recommendations contained herein are based on correct and factual data. However, no express or implied guarantee or warranty of any kind is made with respect to this information. Use this information only to supplement other information you have gathered and then make an independent determination about the completeness and suitability of all information to ensure the proper use and disposal of this product and the health and safety of employees and customers.

Information Sources

Issued By
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Revision Date
06/23/2015

Revision
8

Supersedes Date
11/27/2014