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

**Product name:** KODAK RAPIDE DEVELOPER REPLENISHER  
**Product code:** 10082898  
**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 kes@kodak.com.  
**Synonyms:** PCD 6518  
**Product Use:** photographic processing chemical, For industrial use only.

2. Hazards identification

**CONTAINS:** Diethylene glycol (111-46-6), 4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine (92-09-1), Potassium carbonate (584-08-7), Potassium hydroxide (1310-58-3), N,N-diethylhydroxylamine (3710-84-7), Sodium hydroxide (1310-73-2)

**DANGER!**  
HARMFUL IF ABSORBED THROUGH SKIN OR SWALLOWED  
CAUSES EYE BURNS  
CAUSES SKIN IRRITATION  
MAY CAUSE ALLERGIC SKIN REACTION  
CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION

**HMIS III Hazard Ratings:** Health - 3*, Flammability - 1, Physical Hazard - 0  
**NFPA Hazard Ratings:** Health - 3, Flammability - 1, 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

<table>
<thead>
<tr>
<th>Weight percent</th>
<th>Components - (CAS-No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 - 50</td>
<td>Diethylene glycol (111-46-6)</td>
</tr>
<tr>
<td>10 - 15</td>
<td>Potassium carbonate (584-08-7)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine (92-09-1)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>Potassium hydroxide (1310-58-3)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>N,N-diethylhydroxylamine (3710-84-7)</td>
</tr>
<tr>
<td>0.1 - &lt; 1</td>
<td>Sodium hydroxide (1310-73-2)</td>
</tr>
</tbody>
</table>
4. First aid measures

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

**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:** 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. Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.

**Notes to physician:**

- **Treatment:** Strong alkalis bind tissue protein. Following initial flushing of the eye with water, continued irrigation of the eye with saline is recommended.

5. Fire-fighting measures

**Extinguishing Media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

**Hazardous Combustion Products:** Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, (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.

7. Handling and storage

**Personal precautions:** Avoid breathing mist or vapour at concentrations greater than the exposure limits. Do not get in eyes and avoid contact with 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:** Keep from contact with oxidizing materials.

**Storage:** Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)
8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Regulatory List</th>
<th>Value Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium hydroxide</td>
<td>ACGIH</td>
<td>Ceiling Limit Value</td>
<td>2 mg/m3</td>
</tr>
<tr>
<td>4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine</td>
<td>EK HPG</td>
<td>time weighted average</td>
<td>1 mg/m3</td>
</tr>
</tbody>
</table>

**Ventilation:** Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

**Respiratory protection:** None should be needed. 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.

**Eye protection:** If a full-face respirator is not worn, wear vapour-tight chemical goggle and a face shield.

**Hand protection:** Wear impervious gloves and protective clothing appropriate for the risk of exposure.

9. Physical and chemical properties

**Physical form:** liquid

**Colour:** orange

**Odour:** amine

**Specific gravity:** 1.237

**Vapour pressure (at 20.0 °C (68.0 °F))**: 24 mbar (18.0 mm Hg)

**Vapour density:** 0.6

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

**Water solubility:** complete

**pH:** 13.8

**Flash point:** does not flash

10. Stability and reactivity
Stability: Stable under normal conditions.

No exotherm to 420 °C

Incompatibility: Strong oxidizing agents, Acids, Metals.

Hazardous decomposition products: nitrogen oxides (NOx), Sulphur oxides

Hazardous Polymerization: Hazardous polymerisation does not occur.

11. Toxicological information

Effects of Exposure

General advice:

Contains: Diethylene glycol. Can cause kidney damage and CNS effects following ingestion. Repeated oral exposure to high doses can cause liver damage.

Contains: 4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine. May cause kidney damage based on animal data.

Contains: Sodium hydroxide. The following exposure effects are based on pH of the solution, concentration of the base, and a review of the literature.

Inhalation: Expected to be a low hazard for recommended handling.

Eyes: Causes eye burns.

Skin: Harmful if absorbed through skin. Causes skin irritation. May cause allergic skin reaction based on human experience.

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

Data for Diethylene glycol (CAS 111-46-6):

Acute Toxicity Data:
Oral LD50 (rat): 12,565 mg/kg
- Inhalation LC50 (rat): > 5.08 mg/l / 4 hr
- Dermal LD50 (rabbit): 11,890 mg/kg
- Skin irritation: slight to moderate
- Eye irritation: mild

Mutagenicity/Genotoxicity Data:
Ames test: negative (in presence and absence of activation)

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

Acute Toxicity Data:
Oral LD50 (rat): 273 mg/kg
  - Skin irritation: severe

Data for Sodium hydroxide (CAS 1310-73-2):

**Acute Toxicity Data:**
Oral LD50 (rat): 50 - 400 mg/kg
- Dermal LD50 (rabbit): 1,350 mg/kg
- Skin irritation: Severe skin irritation
- Eye irritation: severe

Data for N,N-diethylhydroxylamine (CAS 3710-84-7):

**Acute Toxicity Data:**
Oral LD50 (rat): 2,190 mg/kg
- Inhalation LC50 (rat): 3140 ppm / 4 hr
- Dermal LD50 (rabbit): 1,300 mg/kg
- Skin irritation: severe
- Skin Sensitization (guinea pig): negative
- Eye irritation (unwashed eyes): moderate

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:**
- Inhalation (28-day, male and female rat): NOAEL; 150 ppm/6 hours/day

Data for 4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine (CAS 92-09-1):

**Acute Toxicity Data:**
Oral LD50 (rat): 200 mg/kg
- Skin Sensitization (guinea pig): moderate (Causes sensitization on guinea-pigs.)

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.

**Carcinogenicity:**
- Dermal study (mouse, 2 years): NOEL; 62 mg/kg/day (only dose tested)

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

**Acute Toxicity Data:**
Oral LD50 (rat): 1,870 mg/kg

12. Ecological information

The following properties are ESTIMATED from the components of the preparations.
Potential Toxicity:

Toxicity to fish (LC50): 10 - 100 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

The information given below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions. Please consult the product packaging for further details.

IATA: UN number: UN1814
       Proper shipping name: POTASSIUM HYDROXIDE SOLUTION
       Class: 8
       Packaging group: III

IMDG: UN number: UN1814
       Proper shipping name: POTASSIUM HYDROXIDE SOLUTION
       Class: 8
       Packaging group: III

US DOT: UN number: UN1814
       Proper shipping name: POTASSIUM HYDROXIDE, SOLUTION
       Class: 8
       Packaging group: III

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

<table>
<thead>
<tr>
<th>Regulatory List</th>
<th>Notification status</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA</td>
<td>Not all listed</td>
</tr>
<tr>
<td>DSL</td>
<td>Not all listed</td>
</tr>
<tr>
<td>NDSL</td>
<td>Listed</td>
</tr>
<tr>
<td>EINECS</td>
<td>Not all listed</td>
</tr>
<tr>
<td>ELINCS</td>
<td>None listed</td>
</tr>
</tbody>
</table>
Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH): No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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 WARNING! This product contains a chemical known in the State of California to cause cancer.

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

U.S. - CERCLA/SARA - Section 302 (40 CFR § 355 Appendices A and B - The List of Extremely Hazardous Substances and Their Threshold Planning Quantities): No components of this product are subject to the SARA Section 302 (40 CFR 355) reporting requirements.

U.S. - CERCLA/SARA - Section 313 (40 CFR § 372.65 Toxic Chemical Release Reporting): No components of this product are subject to the SARA Section 313 (40 CFR 372.65) reporting requirements.

U.S. - California - 8 CCR Section 339 - Director's List of Potassium hydroxide
Material Safety Data Sheet

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):
Potassium hydroxide

U.S. - Minnesota Employee Right-to-Know (5206.0400, Subpart 5. List of Hazardous Substances):
Diethylene glycol, Potassium hydroxide

U.S. - New Jersey - Worker and Community Right to Know Act (N.J.S.A. 34:5A-1):
Potassium hydroxide

U.S. - Pennsylvania - Part XIII. Worker and Community Right-to-Know Act (Chapter 323 Hazardous Substance List, Appendix A):
Diethylene glycol, Potassium hydroxide, Sodium hydroxide, Potassium carbonate, Water, 4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine

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 RAPIDE DEVELOPER REPLENISHER
CONTAINS: Diethylene glycol (111-46-6), 4-(N-ethyl-N-2-methanesulphonylaminoethyl)-2-methylphenylenediamine (92-09-1), Potassium carbonate (584-08-7), Potassium hydroxide (1310-58-3), N,N-diethylhydroxylamine (3710-84-7), Sodium hydroxide (1310-73-2).

DANGER! HARMFUL IF ABSORBED THROUGH SKIN OR SWALLOWED. CAUSES EYE BURNS. CAUSES SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. CAN CAUSE KIDNEY DAMAGE AND CNS EFFECTS FOLLOWING INGESTION.

Avoid breathing mist or vapour at concentrations greater than the exposure limits. Do not get in eyes and avoid contact with 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. 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. 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. Call a physician or poison control centre.
immediately. Never give anything by mouth to an unconscious person. **Note to Physicians:** Strong alkalis bind tissue protein. Following initial flushing of the eye with water, continued irrigation of the eye with saline is recommended. 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 water spray, alcohol-resistant foam, dry chemical or carbon dioxide. **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. Additional Components Include: Water (7732-18-5).

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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.

R-1, S-3, F-1, C-0