SECTION 1: IDENTIFICATION

Product name: PENAIR HD 4
Recommended use: Aircraft exterior cleaner
Physical Description: Clear water white to pale yellow/amber liquid with mild odor
Generic Ingredients: Water, surfactants, and glycol ether
Manufacturer: Penetone Corporation
Business Contact: Customer Service
125 Kingsland Ave. 800-631-1652 x2602 or 2272
Clifton, NJ 07014 800-631-1652 x2211 or 2257
800-631-1652 or 201-567-3000

Emergency Phone Numbers: PENETONE 201-567-3000 CHEMTREC 800-424-9300

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health: Skin irritation: 2
Eye irritation: 2A

Carcinogenicity: 2
Physical: not classified

WARNING!
Causes Skin Irritation.
Causes Serious Eye Irritation.
Suspected of Causing Cancer.

Precautionary Statements:

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, clothing, eye protection, and face protection.
Wash hands and exposed skin thoroughly after handling.

Response:
If exposed or concerned: Get medical advice/attention.
If on skin: Wash with plenty of water. If skin irritation 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. If eye irritation persists: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with local, regional, and national regulations (see Sections 13 and 15 of SDS for disposal and reporting requirements).

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS#</th>
<th>Concentration Wt% (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>50-75</td>
</tr>
<tr>
<td>Linear alcohol ethoxylate</td>
<td>68439-46-3</td>
<td>15-25</td>
</tr>
<tr>
<td>Dipropylene glycol monomethyl ether</td>
<td>34590-94-8</td>
<td>5-15</td>
</tr>
<tr>
<td>Coco diethanolamide</td>
<td>68603-42-9</td>
<td>1-10</td>
</tr>
</tbody>
</table>

(1) Exact percentages being withheld under trade secret provision of OHSA HCS 1910.1200(i)
SECTION 4: FIRST-AID MEASURES

General Description of Symptoms & First-Aid Measures
Most likely work-place exposure routes will be skin contact or inhalation.

For skin contact, typically no immediate effects will be observed. A slight tingling sensation might be felt some time after exposure. Slight reddening or minor irritation could also develop if product is not quickly washed off.

Inhalation exposure may produce varied effects. Typical symptoms could include coughing, sneezing, and a tingling sensation in the nose, throat, and lungs.

Eyes
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists or develops: Get medical advice or attention. Penetone recommends that after any eye exposure a physician be seen immediately.

Ingestion
If swallowed: Rinse mouth. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

Inhalation
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center, doctor, physician or other competent medical authority if you feel unwell.

Skin
If on skin: Wash with plenty of water or a mild soap. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice or attention.

Special Treatment / Other
None

SECTION 5: FIRE FIGHTING MEASURES

Flammable Properties
Classification: Non-flammable
Flash Point: None-to-boil
Autoignition Temperature: Not determined
Lower Flammable Limit: Not applicable Upper Flammable Limit: Not applicable

Specific Hazards
Product is water based and presents no unusual fire hazards.

Extinguishing Media
Use extinguishing agents appropriate for controlling surrounding fire.

Unsuitable: None

Protection & Precautions for Firefighters
Protective Equipment & Clothing: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.

Fire Fighting Guidance: Cool containers with flooding quantities of water until well after fire is out. Move containers from fire area if you can do it safely. Dike fire control water for later disposal; do not scatter material. Containers can expand and explode under fire conditions due to vapor buildup. Always stay away from containers engulfed in fire.
Hazardous Combustion Products: Smoke, fumes, and oxides of carbon and nitrogen when taken to dryness.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Land Spill
Stop leak if you can do it safely. For large spills, dike and pump into properly labeled containers for reclamation or disposal. For small spill, soak up with absorbent material and place in properly labeled containers for disposal.

Water Spill
This is a water based product and will completely mix/dissolve in water making recovery difficult. Check with local environmental regulatory agencies for reporting requirements.

See SECTION 8 for EXPOSURE CONTROLS and PERSONAL PROTECTION.

SECTION 7: HANDLING & STORAGE

Handling
Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. Avoid personal contact with any residue. Do not cut, weld, or reuse empty container.

Storage
Keep container tightly closed when not in use. Do not store near strong acids or bases. Do not store in direct sunlight. Avoid storing above 120°F (49°C).

SECTION 8: EXPOSURE CONTROLS and PERSONAL PROTECTION

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.

Personal Protection
Inhalation  A respiratory protection program that meets OSHA’s 29 CFR 1910.134 or ANSI Z88.2 requirements must be followed whenever workplace conditions warrant respirator use. Use of a general purpose particulate mask or respirator with particulate filter is recommended.

Skin  Wear chemical resistant gloves such as: rubber, nitrile, neoprene, or latex when skin contact is possible. Protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn depending on how the product is used. PPE should be cleaned thoroughly after each use.

Eyes  Penetone recommends always wearing safety glasses as a minimum in any workplace. Conditions may warrant the use of chemical goggles and possibly a face shield. Consult your standard operating procedure or safety professional for advice. Use protective eye and face devices that comply with ANSI Z87.1-1987.

Additional Remarks
Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the hazards and/or potential hazards that may be encountered during use.

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Component Name</th>
<th>Source</th>
<th>Value</th>
<th>Type</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol methyl ether</td>
<td>ACGIH</td>
<td>100 ppm</td>
<td>TWA</td>
<td>Skin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 ppm</td>
<td>STEL</td>
<td>Skin</td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>100 ppm</td>
<td>TWA</td>
<td>Skin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 ppm</td>
<td>STEL</td>
<td>Skin</td>
</tr>
</tbody>
</table>
SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

Appearance: clear water white to light yellow/amber liquid
Odor: mild
Odor Threshold: not determined
pH: about 8.5
Melting Point / Freezing: about 32°F
Boiling Point / Boiling Point Range: about 212°F
Flash Point: none to boil
Evaporation Rate: equal to water
Flammability: not applicable
Lower Flammable Limit: not applicable
Upper Flammable Limit: not applicable
Explosive Properties: not applicable
Vapor Pressure: equal to water
Relative Vapor Density: equal to water
Relative Density: 1.01
Solubility (Water): water soluble
Partition Coefficient (K<sub>ow</sub>): not determined
Auto-ignition temperature: not determined
Decomposition temperature: not determined
Viscosity: 10-30 centipoise

SECTION 10: STABILITY & REACTIVITY

Reactivity
Product is not reactive, but if strong acids or bases are added, heat will be generated which could cause splattering.

Chemical Stability
Stable.

Hazardous Reactions
None.

Conditions to Avoid
Do not store near strong acids or bases.

Incompatible Materials
Strong acids or bases.

Hazardous Decomposition Products
Oxides of carbon and nitrogen when taken to dryness.

SECTION 11: TOXICOLOGICAL INFORMATION

Product Summary
Based upon ingredient data, product is non-toxic by oral and dermal routes exposure. Based upon ingredient
information, product is expected to cause skin irritation and to cause serious eye irritation.

**Acute Toxicity:**
- **Dermal:** \(>7,000\) mg/kg rabbit (estimated from additivity formula)
- **Inhalation:** no data available
- **Oral:** \(>5,000\) mg/kg rat (estimated from additivity formula)

**Skin Corrosion/Irritation**
Causes skin irritation. Based upon component data.

**Serious Eye Damage/Irritation**
Causes serious eye irritation. Based upon component data.

**Sensitization - Respiratory or Skin**
Not expected to be a skin or respiratory sensitizer. Based upon component data.

**Germ Cell Mutagenicity**
Not expected to be mutagenic based upon partial component information and comparison to structurally similar compounds.

**Carcinogenicity**
Coco diethanolamide is listed by IARC as Group 2B: Possibly carcinogenic to humans.

**Developmental/Reproductive Toxicity**
No data available. Not expected to be a developmental or reproductive toxin based upon partial component information and comparison to structurally similar compounds.

**Specific Target Organ Effects - Single Exposure**
No data available.

**Specific Target Organ Effects - Repeated or Prolonged Exposure**
No data available.

For the linear alcohol ethoxylate surfactant used in this product, repeat dose 90 day oral sub-chronic NOAEL in male/female rats was \(>500\) mg/kg/d and \(>400\) mg/kg/d, while a 90 day dermal sub-chronic NOAEL was \(>125\) mg/kg/d for male/female rats.

**Aspiration Hazard**
Based upon components, product not expected to be aspiration hazard.

**SECTION 12: ECOLOGICAL INFORMATION**

**Product Summary**
Product is expected to be harmful fish, aquatic invertebrates, algae, and microorganisms. (Acute aquatic toxicity category 3 by European Union classification). Product is readily biodegradable.

**Ecotoxicity**
LC/EC/IC 10-100 mg/l (estimated using additivity formula).
In three separate range finding studies, 24 hr, 48 hr and 96 hr LC50s for fathead minnows and 24 hr and 48 hr LC50s for ceriodaphnia dubia were found to be 10-50 ppm.

**Persistence and Degradability**
Product components considered readily biodegradable.
In three separate 28 days studies (all by EPA 796.3100), degradability was determined to be: (1) 87.7% by DOC; (2) 89.3% DOC, 39.8% CO\(_2\); (3) 90.0% by DOC, 40.3% by CO\(_2\) evolution. Minimum inhibitory concentrations were reported to be less than 3.125% in all studies. Product as a whole should be considered readily biodegradable.
Bioaccumulative Potential
Product not considered bioaccumulative

Mobility in soil
No soil mobility data available.

Other Adverse Effects
None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Product is a nonhazardous waste under RCRA definitions. Dispose of contents/container in accordance with all applicable federal, state, and local regulations.

Note: Contaminated product, soil, water, container residues and spill cleanup materials may be hazardous wastes. Appropriate hazardous waste designation is the responsibility of the user.

SECTION 14: TRANSPORT INFORMATION

ID No.: Not applicable, nonhazardous material
Proper Shipping Name: Not applicable
Hazard Class: Not applicable
Packing Group: Not applicable
Label: None
Marine Pollutant: Not applicable
RQ: None
Special Precautions: None

SECTION 15: REGULATORY INFORMATION

TSCA
The ingredients in this product are listed on the TSCA inventory.

RCRA HAZARD CLASS
Nonhazardous waste

SARA 311/312 REPORTABLE HAZARD CATEGORIES: Immediate (Acute) Health

REPORTING REQUIREMENTS (all quantities in pounds)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS / 313 Code</th>
<th>Section 302 (EHS) TPQ</th>
<th>Section 304 EHS RQ</th>
<th>CERCLA RQ</th>
<th>Section 313</th>
<th>CAA 112(r) TQ</th>
<th>CWA / OPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>no component is subject to reporting requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NEW JERSEY RIGHT-TO-KNOW INFORMATION
This product contains water (CAS# 7732-18-5), alcohol ethoxylate (CAS# 68439-46-3), dipropylene glycol methyl ether (CAS#34590-94-8) and coconut! diethanolamide (CAS# 68603-42-9).

CALIFORNIA PROPOSITION 65 INFORMATION
This product contains a chemical recognized by the state of California to cause cancer: coco diethanolamide (CAS# 68603-42-9).
SCAQMD INFORMATION
Is there a photochemically reactive material present? No
What is the % by volume of photochemically reactive material? 0
What is the VOC content? 100 mg/l
What is the vapor pressure of VOC’s? Less than 0.1 mm Hg @ 20°C

SECTION 16: OTHER INFORMATION

REVISION SUMMARY
Change in Section 1

SUPERSEDES ISSUE DATE
January 25, 2015

HAZARD RATING SYSTEMS:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>HMIS</th>
<th>NFPA</th>
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</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>B</td>
<td></td>
</tr>
</tbody>
</table>

KEY
4 = Severe
3 = Serious
2 = Moderate
1 = Slight
0 = Minimal

FOR ADDITIONAL PRODUCT INFORMATION, CONTACT YOUR SALES ENGINEER
FOR ADDITIONAL HEALTH/SAFETY INFORMATION, CALL 201-567-3000

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