SAFETY DATA SHEET
Penetone® Corporation, 125 Kingsland Ave., Clifton, NJ 07014
CAGE 56883

PENAIR® M5704A
MIL-PRF-85704C Type I
NSN 6850-00-181-7594/7597 (5/55 gal)

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SECTION 1: IDENTIFICATION

Product name: PENAIR M5704A
Recommended use: Gas turbine compressor cleaning
Physical Description: Clear amber liquid with mild solvent odor
Generic Ingredients: Aromatic hydrocarbons, surfactants, water, and glycol/glycol ether
Manufacturer: Penetone Corporation
125 Kingsland Ave.
Clifton, NJ 07014
800-631-1652 or 201-567-3000

Business Contact: Customer Service
800-631-1652 x2602 or 2272
Product Safety
800-631-1652 x2211 or 2257

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

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

<table>
<thead>
<tr>
<th>Health:</th>
<th>Specific target organ toxicity - repeated exposure:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin irritation: 2</td>
<td>2</td>
</tr>
<tr>
<td>Eye irritation: 2A</td>
<td>Carcinogenicity: 2</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure: 2</td>
<td>Aspiration hazard: 1</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure: 3</td>
<td>Physical:</td>
</tr>
</tbody>
</table>

DANGER!
May Be Fatal If Swallowed and Enters Airways.
Causes Skin and Serious Eye Irritation.
May Cause Drowsiness or Dizziness.
May Cause Damage to Organs (Central Nervous System, Kidneys, and Liver) If Swallowed.
Suspected of Causing Cancer.
Combustible Liquid.

Precautionary Statements:

Prevention:
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Do not breathe fumes, vapors or mists if inhalable mists occur during use. Use only outdoors or in a well-ventilated area. Wear protective gloves, eye protection, and face protection.
Do not eat, drink or smoke when using this product. Wash hands and exposed skin thoroughly after handling.

Response:
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.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. A mild soap may be used. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center, doctor, emergency room or 911 if you feel unwell.
If swallowed: Immediately call a poison center, doctor, emergency room, or 911. Do NOT induce vomiting. If exposed or concerned: Call a poison center, doctor, or emergency room.

Storage:
Store locked up. Store in a well-ventilated place. Keep container tightly closed.

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>Aromatic petroleum naphtha</td>
<td>64742-94-5</td>
<td>45-65</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>10-25</td>
</tr>
<tr>
<td>Ethoxylated nonylphenol</td>
<td>127087-87-0</td>
<td>1-10</td>
</tr>
<tr>
<td>Coco diethanolamide</td>
<td>68603-42-9</td>
<td>1-10</td>
</tr>
<tr>
<td>1-Butoxyethanol</td>
<td>111-76-2</td>
<td>1-10</td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>111-46-6</td>
<td>1-10</td>
</tr>
<tr>
<td>Polyoxylethylene-polyoxypropylene block copolymer</td>
<td>9003-11-6</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. Slight reddening or minor irritation could develop some time after exposure if product is not quickly washed off. For sensitive individuals, a rash may appear.

**Inhalation** exposure may produce varied effects, particularly if exposure occurs above the recommended workplace exposure limits (see SECTION 8). Typical symptoms would include headaches, dizziness, and drowsiness. In extreme cases, unconsciousness and other central nervous effects may occur.

**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: Immediately call a poison center, doctor, physician or other competent medical authority. Rinse mouth. Product presents an aspiration hazard. DO NOT INDUCE VOMITING.

**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 (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. A mild soap may be used to wash skin. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice or attention.

**Special Treatment / Other**

None

**SECTION 5: FIRE FIGHTING MEASURES**

**Flammable Properties**

**Classification**: 4  
**Flash Point**: 145°F TCC, 180°F COC  
**Autoignition Temperature**: not determined
Lower Flammable Limit: not determined  Upper Flammable Limit: not determined

**Specific Hazards**
Combustible liquid. Can form combustible mixtures at or above the flash point. Although the product is combustible, it is water based and water dilutable and will self extinguish with addition of water.

**Extinguishing Media**
Suitable: SMALL FIRE: Use dry chemical, carbon dioxide (CO₂), water spray or regular foam. LARGE FIRE: water spray, water fog, or foam.

Unsuitable: Do not use solid water stream as this may spread fire.

**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.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Land Spill**
Eliminate sources of ignition. Do not touch or walk through spilled material. 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**
Product forms emulsion with water which may make cleanup difficult. Avoid agitation to minimize emulsion formation. Remove product from water surface by skimming or with suitable absorbents. Put into properly labeled containers for reclamation or disposal. If allowed by local environmental regulatory agencies, you may use a suitable dispersant. Check with local environmental regulatory agencies for reporting requirements.

See SECTION 8 for EXPOSURE CONTROLS and PERSONAL PROTECTION.

### SECTION 7: HANDLING & STORAGE

**Handling**
Do not handle near heat, sparks, or flame. Avoid contact with oxidizing agents. Use only with adequate ventilation/personal protection (SEE section 8). Avoid contact with eyes, skin and clothing. After handling, always wash hands thoroughly with soap and water. Avoid personal contact with any residue. Dispose of empty containers with care. Empty containers can contain flammable residue and explosive vapors. **Do not cut, weld, or reuse empty container.**

**Storage**
Store in a well-ventilated place. Keep container tightly closed. Store locked up. Do not store near heat, sparks, open flame, or other ignition sources. Do not store near strong oxidizing agents. 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 an organic vapor mask or respirator 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>Aromatic petroleum naphtha</td>
<td>ACGIH</td>
<td>100 mg/m³</td>
<td>TWA</td>
<td>Appendix H</td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>350 mg/m³</td>
<td>TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1800 mg/m³</td>
<td>Ceiling</td>
<td>15 minutes</td>
</tr>
<tr>
<td>1-Butoxyethanol</td>
<td>OSHA Z1</td>
<td>500 ppm</td>
<td>TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>20 ppm</td>
<td>TWA</td>
<td>A3; BEI</td>
</tr>
<tr>
<td></td>
<td>NIOSH</td>
<td>5 ppm</td>
<td>TWA</td>
<td>skin</td>
</tr>
<tr>
<td></td>
<td>OSHA</td>
<td>50 ppm</td>
<td>TWA</td>
<td>skin</td>
</tr>
</tbody>
</table>

**SECTION 9: PHYSICAL & CHEMICAL PROPERTIES**

**Appearance:** clear amber liquid

**Odor:** mild solvent

**Odor Threshold:** not determined

**pH:** about 9

**Melting Point / Freezing:** about 30°F

**Boiling Point / Boiling Point Range:** about 212°F

**Flash Point:** 145°F TCC, 180°F COC

**Evaporation Rate:** equal to water

**Flammability:** not applicable

**Lower Flammable Limit:** not determined

**Upper Flammable Limit:** not determined

**Explosive Properties:** not applicable

**Vapor Pressure:** equal to water

**Relative Vapor Density:** not determined

**Relative Density:** 0.95

**Solubility (Water):** forms emulsion (separate in one to 12 hours)

**Partition Coefficient (K_{ow}):** not determined

**Auto-ignition temperature:** not determined
SECTION 10: STABILITY & REACTIVITY

Reactivity
Product is stable and only reactive under extreme conditions (very high heat/pressure) or in the presence of specific incompatible materials (see below).

Chemical Stability
Product is stable.

Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Combustible liquid. Do not store near sources of heat, sparks, open flame, or other ignition sources.

Incompatible Materials
Strong oxidizing agents.

Hazardous Decomposition Products
Carbon monoxide and dioxide and nitrogen oxides when taken to dryness and burned.

SECTION 11: TOXICOLOGICAL INFORMATION

Product Summary
Product is irritating to the skin and eyes. Vapor/aerosol concentrations above recommended exposure levels are irritating to the eyes and respiratory tract, and may cause headaches, dizziness, drowsiness, unconsciousness and other central nervous system effects.

Acute Toxicity:
- **Dermal:** Rabbits, LD50 > 2,000 mg/kg (estimated using additivity formula)
- **Inhalation:** no data available
- **Oral:** Rats, LD50 > 2,000 mg/kg (estimated using additivity formula)

Skin Corrosion/Irritation
Based upon component information, product is expected to be mildly irritating to the skin.

Serious Eye Damage/Irritation
Based upon component data, product is expected to cause moderate to serious eye irritation.

Sensitization - Respiratory or Skin
Based upon component data, not expected to be a skin sensitizer.

Germ Cell Mutagenicity
No data available. Based upon component data, product not expected to exhibit germ cell mutagenicity.

Carcinogenicity
1-Butoxyethanol is listed by ACGIH as Group A3: confirmed animal carcinogen with unknown relevance to humans

Cocodiethanolamide is listed by IARC as Group 2B: Possibly carcinogenic to humans.

Reproductive Toxicity
No data available.

The nonionic surfactant used in this product has produced effects in the fetus only at levels that were toxic to the parent animals.

1-Butoxyethanol has been toxic to the fetus lab animals at doses toxic to the mother. Effects on reproduction have been seen only at doses that produced significant toxicity to the parent animal.

Diethylene glycol was found to be a reproductive and developmental toxicant when administered at high doses to lab animals.

Specific Target Organ Effects - Single Exposure
No data available.

Ingestion of diethylene glycol has caused damage to the lungs, brain, pancreas and adrenal glands of lab animals. Metabolic acidosis, hyperkalemia, elevated blood creatine and urea levels, and hypoglycemia were observed. May cause central nervous system depression, gastrointestinal tract, liver, and kidney damage.

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

The aromatic hydrocarbon caused kidney effects in male rats which are not considered relevant to humans.

Repeated exposure to 1-butoxyethanol has caused hemolysis and secondary effects on the kidney and liver in lab animals. Small but statistically significant increases in tumors were observed in mice but not rats. These effects are not believed to be relevant to humans.

Repeated exposure to diethylene glycol may cause damage to the central nervous system, kidneys, and liver.

Aspiration Hazard
Based upon available data and comparison to similar materials, if swallowed, may pose a lung aspiration hazard during vomiting. Lung aspiration may result in chemical pneumonitis, pulmonary edema, and damage to lung tissue or death.

SECTION 12: ECOLOGICAL INFORMATION

Product Summary
Product is expected to be toxic to fish, aquatic invertebrates, algae, and microorganisms. (Acute aquatic toxicity category 2 by European Union classification).

Ecotoxicity
LC/EC/IC 1-10 mg/l (estimated using additivity formula)

Persistence and Degradability
Based upon component data, product is expected to be inherently biodegradable.

Bioaccumulative Potential
No data available for the product. Aromatic solvent used in this product has the potential to bioaccumulate.

Mobility in soil
No data available for the product. Product is a complex mixture. Components will partition into water and soil phases depending on inherent solubility of component in water.

Other Adverse Effects
None known
SECTION 13: DISPOSAL CONSIDERATIONS

Nonhazardous waste. 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.: None
Proper Shipping Name: Nonhazardous (nonregulated) material
Hazard Class: None
Packing Group: None
Label: None
Marine Pollutant: No
RQ: No
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>1-Butoxyethanol</td>
<td>N230 Glycol ethers</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylene glycol</td>
<td>N230 Glycol ethers</td>
<td>(1)</td>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
| (1) CERCLA hazardous substance with no assigned RQ

NEW JERSEY RIGHT-TO-KNOW INFORMATION
This product contains aromatic petroleum naphtha (CAS 64742-94-5), water (CAS# 7732-18-5), ethoxylated nonylphenol (CAS 127087-87-0), coco diethanolamide (CAS 68603-42-9), 1-butoxyethanol (CAS 111-76-2), and diethylene glycol (CAS 111-46-6).

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? Yes
What is the % by volume of photochemically reactive material? 58
What is the VOC content? 650 g/l
What is the vapor pressure of VOC's? approximately 1 mm Hg @ 20°C

SECTION 16: OTHER INFORMATION

HAZARD RATING SYSTEMS:

<table>
<thead>
<tr>
<th></th>
<th>HMIS</th>
<th>NFPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>FLAMMABILITY</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>REACTIVITY</td>
<td>0</td>
<td>B</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

THE INFORMATION PRESENTED HEREIN HAS BEEN COMPILED FROM SOURCES CONSIDERED TO BE DEPENDABLE AND ACCURATE TO THE BEST OF PENETONE'S KNOWLEDGE. THE INFORMATION RELATES TO THIS SPECIFIC MATERIAL. IT MAY NOT BE VALID FOR THIS MATERIAL IF USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY ONESELF AS TO THE SUITABILITY AND COMPLETENESS OF THIS INFORMATION FOR HIS OWN PARTICULAR USE.