SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Chemical Name
Trade name
CAS No.

Relevant identified uses of the substance or mixture and uses advised against
Identified use(s)
Surfactant
Uses advised against
None

Details of the supplier of the safety data sheet
Company Identification
Nease Co. LLC
10740 Paddys Run Road
Harrison, OH 45030

Telephone
(513) 738-1255
Telephone (Product Information)
(888) 762-7373
Fax
(513) 587-2828
E-Mail (competent person)
technservice@neaseco.com

Emergency telephone number
Emergency Phone No.
(513) 738-1255
CHEMTREC 24 hr. (800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture
OSHA HCS (29 CFR 1910.1200)
Skin Corr. 1C; Eye Dam. 1; Met. Corr. 1

Label elements

Signal Word(s)
DANGER

Hazard Statement(s)
Causes severe skin burns and eye damage. May be corrosive to metals.

Precautionary Statement(s)
Do not breathe dust/fume/gas/mist/vapors/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If irritation (redness, rash, blistering) develops, get medical attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.

Other hazards
Harmful to aquatic life. Harmful to aquatic life with long lasting effects.
Not classified as PBT or vPvB.

Additional Information
None
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous ingredient(s)</th>
<th>%W/W</th>
<th>CAS No.</th>
<th>Hazard statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol octylphenyl ether phosphate</td>
<td>75 - 85 %</td>
<td>52623-95-7</td>
<td>Causes severe skin burns and eye damage. Harmful to aquatic life.</td>
</tr>
<tr>
<td>Ethoxylated octylphenol</td>
<td></td>
<td>9036-19-5</td>
<td>Harmful to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Orthophosphoric acid</td>
<td>&lt;5%</td>
<td>7664-38-2</td>
<td>May be corrosive to metals. Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>Water</td>
<td>15 - 30%</td>
<td>7732-18-5</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Additional Information – Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below:

- Ethylene Oxide (CAS No. 75-21-8) - May accumulate in the head space of drums

SECTION 4: FIRST AID MEASURES

Description of first aid measures

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is laboured, administer oxygen. If symptoms occur obtain medical attention.

Skin Contact: Wash affected skin with plenty of water. Remove contaminated clothing immediately. If irritation (redness, rash, blistering) develops, get medical attention.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.


Most important symptoms and effects, both acute and delayed: None

Indication of any immediate medical attention and special treatment needed: None

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

-Suitable Extinguishing Media: Extinguish with waterspray, dry chemical, sand or carbon dioxide. Water spray should be used to cool containers.

-Unsuitable Extinguishing Media: None anticipated.

Special hazards arising from the substance or mixture: None anticipated.

Advice for fire-fighters: Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Avoid inhalation of vapours.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Put on protective equipment before entering danger area.

Environmental precautions: Do not allow to enter drains, sewers or watercourses.

Methods and material for containment and cleaning up: Contain spillages with sand, earth or any suitable adsorbent material. Transfer to a container for disposal or recovery. Do not use metal containers for spilled liquid. Wash the spillage area with water. If possible prevent water running into sewers.
SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Keep container closed when not in use. Empty containers may contain residues. Do not use metal containers for storage as the phosphoric acid will react with the metal to liberate flammable hydrogen gas. Do not get in eyes, on skin, or on clothing. This product may contain trace levels of Ethylene oxide (CAS No. 75-21-8), which may accumulate in the head space of containers. Establish monitoring systems for exposure assessment to comply with OSHA standard 29 CFR 1910.1047.

Conditions for safe storage, including any incompatibilities
- Storage Temperature: Store in a cool/low-temperature, well-ventilated (dry) place.
- Incompatible materials: Attacks many materials and clothing. Keep away from oxidising agents. Keep container tightly closed and dry.

Specific end use(s)
Surfactant

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>SUBSTANCE</th>
<th>CAS No.</th>
<th>LTEL (8 hr TWA ppm)</th>
<th>STEL (ppm)</th>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PEL (OSHA)</td>
<td>TLV (ACGIH)</td>
<td>PEL (OSHA)</td>
</tr>
<tr>
<td>Phosphoric acid</td>
<td>7664-38-2</td>
<td>1 mg/m³</td>
<td>1 mg/m³</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>Ethylene Oxide*</td>
<td>75-21-8</td>
<td>1 ppm</td>
<td>1 ppm</td>
<td>5 ppm</td>
</tr>
</tbody>
</table>

* May accumulate in the headspace of drums. OSHA Action Level = 0.5 ppm as an 8-hour time-weighted average. Refer to OSHA 29 CFR 1910.1047.

Recommended monitoring method
NIOSH 7908 (Non-Volatile Acids); NIOSH 1614 (Ethylene Oxide)

Exposure controls
Local exhaust required.

Personal protection equipment

Eye/face protection
The following to be used as necessary: Goggles giving complete protection to eyes. Full face shield.

Skin protection (Hand protection/ Other)
The following to be used as necessary: Gloves (Neoprene or Natural rubber). Chemical protection suit. Wear safety or chemical resistant shoes or boots. Check with protective equipment manufacturer's data.

Respiratory protection
No personal respiratory protective equipment normally required.

Environmental Exposure Controls
Use gloves with insulation for thermal protection, when needed.

Thermal hazards
Do not allow to enter drains, sewers or watercourses.
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Viscous liquid.</td>
</tr>
<tr>
<td>Colour</td>
<td>Pale yellow.</td>
</tr>
<tr>
<td>Odour</td>
<td>Mild</td>
</tr>
<tr>
<td>Odour Threshold (ppm)</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH (Value)</td>
<td>1.5-2.5</td>
</tr>
<tr>
<td>Melting Point (°C) / Freezing Point (°C)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point/boiling range (°C):</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>&gt;121 (250 °F)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Explosive limit ranges</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour Pressure (Pascal)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour Density (Air=1)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Density (g/ml)</td>
<td>1.119 (9.34 lbs/gal)</td>
</tr>
<tr>
<td>Solubility (Water)</td>
<td>Miscible</td>
</tr>
<tr>
<td>Solubility (Other)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition Coefficient (n-Octanol/water)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto Ignition Temperature (°C)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition Temperature (°C)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Kinematic Viscosity (cSt) @ 40°C</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>Not oxidising.</td>
</tr>
<tr>
<td>Other information</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

SECTION 10: STABILITY AND REACTIVITY

Reactivity Stable under normal conditions.

Chemical stability Stable.

Possibility of hazardous reactions None anticipated.

Conditions to avoid Incompatible materials.

Incompatible materials Reacts with -oxidizers, reducing agents, and strong bases

Hazardous Decomposition Product(s) Carbon monoxide, Carbon dioxide, phosphorous compounds

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Inhalation, Skin Contact, Eye Contact

Substances in preparations / mixtures

Polyethylene glycol octylphenyl ether phosphate (CAS No. 52623-95-7) - By analogy with similar materials:

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Oral: LD50 &gt; 2,000 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermal: LD50 &gt; 2,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Irritation/Corrosivity</th>
<th>Causes severe skin burns and eye damage.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitization</td>
<td>No information available</td>
</tr>
<tr>
<td>Repeated dose toxicity</td>
<td>No information available</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th>No information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity for reproduction</td>
<td>No information available</td>
</tr>
</tbody>
</table>

Ethoxylated octylphenol (CAS No. 9036-19-5) - By analogy with similar materials:

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Oral: LD50 = 2,800 - 5,000 mg/kg (rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dermal: LD50 &gt; 2,000 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>NIOSH</th>
</tr>
</thead>
</table>
Irritation/Corrosivity
Causes serious eye damage. Causes skin irritation.

Sensitization
No information available

Repeated dose toxicity
No information available

Carcinogenicity
No information available

<table>
<thead>
<tr>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>NIOSH</th>
</tr>
</thead>
</table>

Mutagenicity
No information available

Toxicity for reproduction
No information available

Orthophosphoric acid (CAS No. 7664-38-2)

Acute toxicity
Oral: LD50 = 2600 mg/kg-bw
Inhalation: LC50 (1 hour) = 3846 mg/m³ (rabbit; mice; guinea pigs)

Irritation/Corrosivity
Causes severe skin burns and eye damage.

Sensitization
Not available.

Repeated dose toxicity
NOAEL (42-54 days) <250 mg/kg (rat)

Carcinogenicity
No information available

<table>
<thead>
<tr>
<th>NTP</th>
<th>IARC</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>NIOSH</th>
</tr>
</thead>
</table>

Mutagenicity
There is no evidence of mutagenic potential.

Toxicity for reproduction
NOAEL = 500 mg/kg (rat)

This product may contain trace levels of Ethylene oxide (CAS No. 75-21-8), which may accumulate in the head space of containers. Establish monitoring systems for exposure assessment to comply with OSHA standard 29 CFR 1910.1047. Ethylene oxide is a known human carcinogen by NTP and a suspected human carcinogen by ACGIH®.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity - Substances in preparations / mixtures

Polyethylene glycol octylphenyl ether phosphate (CAS No. 52623-95-7) - By analogy with similar materials:

Short term
LC50 (96 hour): ~ 40 mg/l (Fish)

Long Term
No data.

Ethoxylated octylphenol (CAS No. 9036-19-5) - By analogy with similar materials:

Short term
LC50 (96 hour): ~ 3 mg/l (Fish)

Long Term
No data.

Persistence and degradability
Not readily biodegradable. Evidence exists of biodegradation processes.

Bioaccumulative potential
No data.

Mobility in soil
No data.

Results of PBT and vPvB assessment
Not available.

Other adverse effects
None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods
Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.

Additional Information
None known.

SECTION 14: TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>Land transport (U.S. DOT)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO/IATA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>3264</td>
<td>3264</td>
</tr>
</tbody>
</table>
Proper Shipping Name: Corrosive Liquid, Acidic, Inorganic, N.O.S (Phosphoric acid)

Transport hazard class(es): 8

Packing group: III

Hazard label(s): Corrosive

Environmental hazards: No

Special precautions for user: None known.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not established.

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

TSCA (Toxic Substance Control Act) - Inventory Status: All components listed or polymer exempt.

Canada Domestic Substance List (DSL) - Listed

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Typical %wt.</th>
<th>RQ (Pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orthophosphoric acid</td>
<td>7664-38-2</td>
<td>&lt;5%</td>
<td>5000</td>
</tr>
</tbody>
</table>

SARA 311/312 - Hazard Categories:

- [ ] Fire
- [ ] Sudden Release
- [x] Reactivity
- [x] Immediate (acute)
- [ ] Chronic (delayed)

SARA 313 - Toxic Chemicals (40 CFR 372):

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Typical %wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycol ether category (fraction of component)</td>
<td>9036-19-5</td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

SARA 302 - Extremely Hazardous Substances(40 CFR 355):

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Typical %wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>---------</td>
<td>-------------</td>
</tr>
</tbody>
</table>

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16.

Date of preparation: December 26, 2014

Additional Information:

HMIS (Hazardous Material Information System)

NFPA (National Fire Protection Association)

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