**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier**

| Chemical Name | Mixture  
|---------------|---------
| Trade name    | NAXONAC® 690-50  
| CAS No.       | Mixture  

**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  
|------------------------|---------------
| Address                | 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) | techservice@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**

<table>
<thead>
<tr>
<th>Hazard Symbol</th>
</tr>
</thead>
</table>

**Signal Word(s)**

<table>
<thead>
<tr>
<th>DANGER</th>
</tr>
</thead>
</table>

**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 SWALLOWED: rinse mouth. Do NOT induce vomiting. Seek medical treatment. 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 |  

Revision: 15 January 2016
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>Ethoxylated nonyl phenol phosphate ester/Ethoxylated alcohol</td>
<td>45-50%</td>
<td>152143-22-1, 127087-87-0</td>
<td>Causes serious eye damage. Causes skin irritation. Harmful to aquatic life.</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>Polyethylene glycol</td>
<td>&lt;2%</td>
<td>25322-68-3</td>
<td>May cause respiratory irritation.</td>
</tr>
<tr>
<td>Water</td>
<td>45-50%</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 victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is labored, 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
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.

Ingestion

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.

-Ulmsuitable 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.

Reference to other sections
None

Additional Information
None

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>
</tr>
</thead>
<tbody>
<tr>
<td>Orthophosphoric acid</td>
<td>7664-38-2</td>
<td>1 mg/m³</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>Ethylene Oxide*</td>
<td>75-21-8</td>
<td>1 ppm</td>
<td>1 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.

Thermal hazards
Use gloves with insulation for thermal protection, when needed.
Environmental Exposure Controls
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>Hazy</td>
</tr>
<tr>
<td>Odour</td>
<td>Bland</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 / Freezing Point</td>
<td>≈ 13</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>&gt;260 (500 °F)</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>&gt;204 (400 °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>≈ 1.13 @ 20°C</td>
</tr>
<tr>
<td>Solubility (Water)</td>
<td>Soluble</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>977-1396 (1104-1578 cps)</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
Polyoxyethylene monooleyl ether phosphate (CAS No. 152143-22-1) - By analogy with similar materials:

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity Oral</td>
<td>LD50 = 4450 mg/kg-bw</td>
</tr>
<tr>
<td>Irritation/Corrosivity</td>
<td>Causes serious eye damage. Causes skin irritation.</td>
</tr>
<tr>
<td>Sensitization</td>
<td>It is not a skin sensitisier.</td>
</tr>
<tr>
<td>Repeated dose toxicity</td>
<td>NOAEL (84 days) &lt; 2.0% (dog)</td>
</tr>
<tr>
<td></td>
<td>NOAEL (84 days) &lt; 2.0% (rat)</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>No information available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NTP No.</th>
<th>IARC No.</th>
<th>ACGIH No.</th>
<th>OSHA No.</th>
<th>NIOSH No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mutagenicity There is no evidence of mutagenic potential.
Toxicity for reproduction No information available

Revision: 15 January 2016
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**
- Corrosive (Skin and Eyes)

**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**

Polyoxyethylene monooleyl ether phosphate (CAS No. 152143-22-1) - By analogy with similar materials:
- **Short term**
  - LC50 (96 hour): 81 mg/L *(Danio rerio)*
- **Long Term**
  - No data.
- **Persistence and degradability**
  - Not readily biodegradable.
- **Bioaccumulative potential**
  - No data.
- **Mobility in soil**
  - Not determined
- **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><strong>UN number</strong></td>
<td><strong>3264</strong></td>
<td><strong>3264</strong></td>
</tr>
<tr>
<td><strong>Proper Shipping Name</strong></td>
<td>Corrosive Liquid, Acidic, Inorganic, N.O.S (Phosphoric acid)</td>
<td>Corrosive Liquid, Acidic, Inorganic, N.O.S (Phosphoric acid)</td>
</tr>
<tr>
<td><strong>Transport hazard class(es)</strong></td>
<td><strong>8</strong></td>
<td><strong>8</strong></td>
</tr>
<tr>
<td><strong>Packing group</strong></td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td><strong>Hazard label(s)</strong></td>
<td>Corrosive</td>
<td>Corrosive</td>
</tr>
<tr>
<td><strong>Environmental hazards</strong></td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Special precautions for user</strong></td>
<td>None known.</td>
<td>None known.</td>
</tr>
</tbody>
</table>

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 (DSL/NDSL)
- Listed DSL: Ethoxylated alcohol; Orthophosphoric acid; Polyethylene glycol
- Listed NDSL: Ethoxylated nonyl phenol phosphate ester

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
- Reactivity
- 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>None</td>
<td>--------</td>
<td>----</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: 9

Date of preparation: January 15, 2016

Additional Information:

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