SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier
- Chemical Name: Mixture
- Trade name: NAXAN® 220
- 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
  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

Label elements
- Hazard Symbol:
  ![WARNING]

Signal word(s):
- WARNING

Hazard statement(s):
- Causes eye irritation.

Precautionary statement(s):
- Wash hands thoroughly after handling.
  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.

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>Composition/information on ingredients</th>
<th>%W/W</th>
<th>CAS No.</th>
<th>Hazard statement(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkylated naphthalene sulfonate, sodium salt</td>
<td>45-55%</td>
<td>Trade Secret</td>
<td>Causes eye irritation.</td>
</tr>
<tr>
<td>Proprietary surfactant 1</td>
<td>&lt;1.5%</td>
<td>Trade Secret</td>
<td>Causes skin irritation. Causes eye irritation. Toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Proprietary surfactant 2</td>
<td>&lt;2.5%</td>
<td>Trade Secret</td>
<td>Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.</td>
</tr>
<tr>
<td>Water</td>
<td>45-55%</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 breathing has stopped, apply artificial respiration.

Skin Contact
Wash affected skin with plenty of water. Continue to wash the affected area for at least 15 minutes. If skin irritation occurs: Get medical advice/attention.

Eye Contact
Immediately flush eyes for at least 15 minutes. Hold eye open and rinse slowly and gently with water. Continue rinsing. If irritation develops and persists, get medical attention.

Ingestion
Drink two glasses of water. Call a physician. If swallowed, and the victim is conscious and alert, induce vomiting immediately, as directed by medical personnel.

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 or foam.

-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.

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
Cover spills with inert absorbent material. Sweep spilled substances into containers. Transfer to a container for disposal.

Reference to other sections
None

Additional Information
None

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling
Do not get in eyes. 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
  Keep container tightly closed. Prevent from freezing. This product should be stored at a temperature greater than: 20°C (68°F). The product will precipitated at 10°C (50°F).

- Incompatible materials
  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></td>
<td></td>
<td>PEL (OSHA)</td>
<td>TLV (ACGIH)</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 1614

Exposure controls
Not normally required.

Personal protection equipment

Eye/face protection
Wear protective eyewear (goggles, face shield, or safety glasses).

Skin protection (Hand protection/ Other)
The following to be used as necessary: Gloves (Neoprene or Natural rubber).

Respiratory protection
No personal respiratory protective equipment normally required. Avoid generation of mist. An approved dust mask should be worn if dust/mist is generated during handling.

Thermal hazards
Use gloves with insulation for thermal protection, when needed.

Environmental Exposure Controls
Do not allow to enter drains, sewers or watercourses.
NAXAN® 220

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>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Amber to Brown</td>
</tr>
<tr>
<td>Odour</td>
<td>Hydrocarbon</td>
</tr>
<tr>
<td>Odour Threshold (ppm)</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH (Value)</td>
<td>7.5 - 10.5 (5% aqueous solution)</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>100 (212 °F)</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>93 (200 °F)</td>
</tr>
<tr>
<td>Evaporation rate (butyl acetate=1)</td>
<td>&lt;1</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>&lt;133 (1 mm HG)</td>
</tr>
<tr>
<td>Vapour Density (Air=1)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Density (g/ml)</td>
<td>Not available.</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>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not available.</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 and acids.
Hazardous Decomposition Product(s)    Carbon monoxide, Carbon dioxide, Sulphur oxides,

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Inhalation, Skin Contact, Eye Contact

Substances in preparations / mixtures

Alkylated naphthalene sulfonate, sodium salt (Trade secret) - By analogy with similar materials:

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Oral: LD50 &gt; 2000 mg/kg-bw</td>
</tr>
<tr>
<td>Irritation/Corrosivity</td>
<td>Causes eye irritation.</td>
</tr>
<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>
<tr>
<td>Mutagenicity</td>
<td>No information available</td>
</tr>
<tr>
<td>Toxicity for reproduction</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>
</table>

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 / mixture

Alkylated naphthalene sulfonate, sodium salt (CAS No. Trade secret)
- Short term: No information available
- Long Term: No information available

Proprietary Surfactant 1 (CAS No. Trade Secret)
- Short term: EC50 (48 hour) = 1.821 mg/L (Daphnia magna, QSAR)
  EC50 (48 hour) = 20 mg/L (Pseudokirchnerella subcapitata)
- Long Term: No information available

Persistence and degradability: This product is predicted to degrade in soil and water.
Bioaccumulative potential: The product has low potential for bioaccumulation.
Mobility in soil: The product is predicted to have low mobility in soil.
Results of PBT and vPvB assessment: Not classified as PBT or vPvB.
Other adverse effects: None known.

Proprietary Surfactant 2 (CAS No. Trade Secret)
- Short term: LC50 (96 hour) = 0.323 mg/L (Pimephales promelas)
  LC50 (48 hour) = 0.716 mg/L (Ceriodaphnia dubia)
  EC50 (72 hour) = 2.02 mg/L (Pseudokirchnerella subcapitata)
- Long Term: NOEC (21 days) = 0.1 mg/L (Daphnia magna)
  EC10 (72 hour) = 1.22 mg/L (Pseudokirchnerella subcapitata)

Persistence and degradability: This product is predicted to degrade in soil and water.
Bioaccumulative potential: The product has low potential for bioaccumulation.
Mobility in soil: The product is predicted to have low mobility in soil.
Results of PBT and vPvB assessment: Not classified as PBT or vPvB.
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>Not classified as dangerous for transport.</td>
<td></td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazard label(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental hazards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions for user</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

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 (NDSL/DSL)
- Listed NDSL: Alkylated naphthalene sulfonate, sodium salt
- Listed DSL: Proprietary surfactants
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>None</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

SARA 311/312 - Hazard Categories:

- [ ] Fire
- [ ] Sudden Release
- [ ] 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>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: 1-16.

Date of preparation: August 24, 2014

Additional Information:

HMIS (Hazardous Material Information System)

NFPA (National Fire Protection Association)

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