CA1660 Palmitic Acid, 98%
Safety Data Sheet

SECTION 1: Identification of the substance or mixture and the company or undertaking

1.1 Product identifier

Product type : Mixture
Trade name : CA1660 Palmitic Acid, 98%
Label name : CA1660 Palmitic Acid, 98%
Chemical name : Hexadecanoic Acid
CAS number : 57-10-3
EC number : 200-312-9

1.2 Recommended and restricted uses of the substance or mixture

Recommended uses : Industrial, lubricants, personal care, cleaners, detergents, soaps, textile additives, rubber additives.
Restricted uses : None known.

1.3 Company identification

Company name : Chemical Associates – A Division of Univar USA Inc.
Company address : 1270 South Cleveland Massillon Road
                  : Copley, OH 44321-1683
Company telephone : 330-666-5200

1.4 Emergency telephone number

Company emergency telephone : 800-347-2891
CHEMTREC telephone : 800-424-9300

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (29CFR1910.1200 Appendix A) : None.
GHS physical hazard : None.
GHS health hazard : None.
GHS environmental hazard : None.

2.2 Label warnings of the substance or mixture

Signal word : None.
Hazard statements : None.
2.3 Hazards not otherwise classified

Other hazards : No additional information available.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name</th>
<th>Percent</th>
<th>CAS number</th>
<th>Health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name</th>
<th>Typical %</th>
<th>CAS number</th>
<th>Health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexadecanoic acid</td>
<td>Palmitic Acid</td>
<td>&gt;98</td>
<td>57-10-3</td>
<td>None</td>
</tr>
</tbody>
</table>

SECTION 4: First-aid measures

4.1 Description of first-aid measures

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>First-aid measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Remove the victim into fresh air. Observe victim’s breathing. If breathing is labored seek immediate medical attention.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>Wash with soap and water. If irritation develops, seek medical attention. Launder contaminated clothing.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>Rinse immediately with plenty of water for 15 minutes. Remove contact lenses if present and easy to do. If irritation occurs, seek immediate medical (ophthalmologist) attention.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Rinse mouth with plenty of water. For ingestion of large quantities seek immediate medical attention. Do not induce vomiting. Contact poison control center.</td>
</tr>
</tbody>
</table>

4.2 Most important symptoms and effects, both acute and delayed

<table>
<thead>
<tr>
<th>Symptoms after inhalation</th>
<th>May experience dizziness and headache.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms after skin contact</td>
<td>Mild irritation of the skin may occur.</td>
</tr>
<tr>
<td>Symptoms after eye contact</td>
<td>Mild irritation of the eye tissue may occur.</td>
</tr>
<tr>
<td>Symptoms after ingestion</td>
<td>May cause corneal inflammation.</td>
</tr>
<tr>
<td></td>
<td>Mild tingling of the tongue and mouth.</td>
</tr>
<tr>
<td></td>
<td>May cause gastrointestinal irritation, nausea and vomiting.</td>
</tr>
</tbody>
</table>

4.3 Indication of any immediate medical attention and special treatment needed
Treatment after inhalation: If breathing is labored seek immediate medical attention.
Treatment after skin contact: If skin irritation occurs seek immediate medical attention.
Treatment after eye contact: If eye irritation occurs seek immediate ophthalmologist attention.
Treatment after ingestion: If ingestion of a large quantity seek immediate poison control center.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable media: Carbon dioxide, alcohol resistant foam and water spray.
Unsuitable media: None known.

5.2 Specific hazards arising from the substance or mixture

Direct fire hazard: Not flammable.
Indirect fire hazard: Exposure to temperature above the flash point (205°C).
Explosive hazard: Exposure to temperature above the flash point (205°C).
Reactivity: Reactivity with strong oxidizers.
Combustion products: Carbon dioxide and carbon monoxide.

5.3 Special protective equipment and precautions for fire-fighters

Protective equipment: Full protective clothing.
Precautions: No additional information available.
Emergency response guide: Not a hazardous material.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Mixture is not hazardous. If mixture is a hot mist or dust, stay upwind.
Protective equipment: Wear rubber gloves, rubber boots, face shield and chemical hazard suit. If material is a hot mist or dust wear dust mask or self contained breathing apparatus.
Emergency procedures: Mark the spill area with hazard tape or cones. Contain the hot liquid spill area with suitable absorbent. Keep away from streams, rivers and lakes. If mixture is a hot mist or dust, alert immediate neighborhood to close windows and doors. Contain and dissipate hot mist or dust via spraying with water.

6.2 Environmental precautions

Precautions: Keep out of streams, rivers and lakes. Mixture is regulated as oil.
6.3 Methods and materials for containment and cleanup

Methods: Use chemical absorbent pigs or manually spread absorbent onto hot liquid spill area. After the mixture is absorbed, dispose in approved waste facility.

Materials: Approved materials include dry earth, sand, clay, chemical absorbent, vermiculite and carbon.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling temperature: About 10 - 20°C above the melt point (62.5°C).

Handling equipment: Rubber hoses or stainless steel (grade 304) lines. Stainless steel (grade 304) for pumps.

7.2 Conditions for safe storage, including any incompatibilities

Storage area: Store in dry area. Store at room temperature. Store in dyke area to contain any spills. Protect from heat.

Packaging materials: Polyethylene, stainless steel (grade 304) and rubber lined or epoxy lined tanks or drums. Graphite or rubber gaskets.

Incompatibilities: Strong oxidizers.

SECTION 8: Exposure controls/personal protection

8.1 Exposure controls

OSHA PEL: None.
ACGIH TLV: None.
NIOSH REL: None.

8.2 Appropriate engineering controls

Engineering controls: If dust exists, install ventilation equipped with carbon canisters. Ventilation should be 10 air exchanges per hour. Local exhaust ventilation is recommended.

8.3 Personal protection equipment

Personal protective equipment: Rubber gloves and safety glasses. Dust mask if dust exists.
SECTION 9: Physical and chemical properties

9.1 Physical and chemical properties

- **Appearance**: White solid in flake, bead or powder form.
- **Odor**: Clear light color liquid above the mixture melt point (62.5°C).
- **Odor threshold**: No data available.
- **pH**: No data available. Mixture is not readily soluble in water.
- **Melting point**: 62.5°C
- **Boiling point**: 351°C (decomposes).
- **Flash point**: 205°C Cleveland Closed Cup.
- **Evaporation rate**: No data available.
- **Flammability**: Not flammable.
- **Lower flammability limit**: No data available.
- **Upper flammability limit**: No data available.
- **Vapor pressure**: 3.8x10^-7 mm Hg at 25°C
- **Vapor density**: No data available.
- **Relative density**: 0.853 at 20/25°C (water).
- **Solubility**: Complete in ethanol and acetone. Insoluble in water.
- **Partition coefficient for n-octanol/water**: Log Kow = 7.17
- **Auto-ignition temperature**: > 250°C.
- **Decomposition temperature**: No data available
- **Viscosity**: 7.8 mPas (cps) at 70°C.

9.2 Other information

- **Other information**: No additional information available.

SECTION 10: Stability and reactivity

- **Reactivity**: May react violently with oxidizers.
- **Chemical stability**: Stable under storage conditions.
- **Possibility of hazardous reactions**: Hazardous polymerization does not occur.
- **Conditions to avoid**: Pressure, shock, static discharge or vibration does NOT result in a hazardous condition.
- **Incompatible materials**: Oxidizers and strong bases.
Hazardous decomposition products: Carbon dioxide and carbon monoxide.

SECTION 11: Toxicological information

11.1 Information on the likely routes of exposure

Inhalation exposure: From hot mist or dust.
Skin exposure: From hot mist or dust.
Ingestion exposure: Not a likely route of exposure.
Eye contact: From hot mist or dust.

11.2 Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: Labored breathing and mild irritation of the lungs may occur.
Skin contact: Mild skin irritation may occur.
Ingestion: Mild irritation of the mouth, tongue, esophagus and stomach may occur.
Eye contact: Mild eye irritation may occur.

11.3 Delayed and immediate effects and also chronic effects from short and long term exposure

Inhalation: Chronic effects are not known.
Skin contact: Chronic effects are not known.
Ingestion: Chronic effects are not known.
Eye contact: Chronic effects are not known.

11.4 Numerical measures of toxicity

Oral LD50: Rat 10000 mg/kg
Skin LD50: Mouse 57 mg/kg intravenous
Ingestion LD50: Rabbit > 2000 mg/kg
Inhalation LD50: No data available.
Skin primary irritation: Of 52 human subjects exposed to a repeat insult patch test of a shave cream formulation containing 2.2% palmitic acid, none developed skin irritation.
Eye primary irritation: Cosmetic product formulations containing 2.2 and 4.4% palmitic acid produced no ocular irritation in 6 albino rabbits.

11.5 Carcinogenicity

National Toxicology Program: Not listed.
International Agency for Research on Cancer: Not listed.
OSHA: Not listed.
CA1660 Palmitic Acid, 98%
Safety Data Sheet

NIOSH: Not listed.

11.6 Other toxicological information

Reproductive toxicity: Not classified.
Germ cell mutagenicity: Not classified.
Respiratory or skin sensitization: Not classified.
Specific target organ toxicity, single exposure: Not classified.
Specific target organ toxicity, repeated exposure: Not classified.
Aspiration hazard: Not classified.

SECTION 12: Ecological information

12.1 Ecotoxicity aquatic

Fish LC50: 150 mg/l 96 hour; Oryzias latipes.
Daphnia EC50: No data available.
Rotifer EC50: No data available.
Algae EC50: No data available.

12.2 Ecotoxicity terrestrial

Ecotoxicity terrestrial: No data available.

12.2 Persistence and degradability

Water: 37% 5 day BOD activated sludge.
: Readily degradable.
Soil: Koc = 189,000
: Immobile.
Air: 20 hour half life.

12.3 Bio-accumulative potential

Log Kow: 7.17
: Has the potential to bio-concentrate.

12.4 Mobility in soil

Surface tension: No data available.
Soil mobility: Koc = 189,000
: Immobile.

12.5 Results of PBT and vPvB assessment

12/05/14
PBT and vPvB assessment: No data available.

12.6 Other adverse effects

Air: Not dangerous to the ozone layer.
Water: Mild pollutant to surface of water.

SECTION 13: Disposal considerations

13.1 Description of waste residues

Storage tank residues: Hot liquid residue from tank cleaning.
Empty package residues: Solid residue remaining in emptied bag or drum container.
Transport trailer residues: Hot liquid residue from transport trailer cleaning.
Absorbent material: Solid absorbent containing mixture from a spill.

13.2 Safe handling of waste residues

Storage tank residues: Refer to section 7 for safe handling.
Empty package residues: Refer to section 7 for safe handling.
Transport trailer residues: Refer to section 7 for safe handling.
Absorbent material: Refer to section 7 for safe handling.

13.3 Methods of disposal

Storage tank residues: Dispose via an approved incineration facility.
Empty package residues: Remove package to an approved package cleaning and recycling facility.
Transport trailer residues: Clean transport trailer at an approved cleaning facility.
Absorbent material: Dispose via an approved incineration facility.

13.4 Hazardous waste classification (RCRA)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Regulation</th>
<th>Listed</th>
<th>Hazardous waste number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ignitability</td>
<td>40CFR261.21</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Corrosivity</td>
<td>40CFR261.22</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td>40CFR261.23</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Toxicity</td>
<td>40CFR261.24</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>
CA1660 Palmitic Acid, 98%
Safety Data Sheet

SECTION 14: Transport information

14.1 UN number

UN number : None.

14.2 UN proper shipping name

Proper shipping name : None.

14.3 Transport hazard class

Hazard class : None.
Hazard label : None.
Hazard pictogram : None.

14.4 Packing group

Packing group : None.

14.5 Environmental hazards

Marine pollutant : Not listed.

14.6 Transport in bulk

US DOT : Not regulated.
IMDG : Not regulated.
IATA : Not regulated.
MARPOL 73/78 : Not regulated.
IBC code : Not regulated.

14.7 Special precautions for user

Special precautions : No additional information available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the substance or mixture

15.1.1 US regulations

SARA 302 (40CFR355) : Not listed.
SARA 311/312 (40CFR370.66) : Not listed.
15.1.2 Chemical inventories

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>TSCA USA</td>
<td>Listed</td>
</tr>
<tr>
<td>AICS Australia</td>
<td>Listed</td>
</tr>
<tr>
<td>DSL Canada</td>
<td>Listed</td>
</tr>
<tr>
<td>EC Europe</td>
<td>Listed</td>
</tr>
<tr>
<td>ECL Korea</td>
<td>Listed</td>
</tr>
<tr>
<td>IECSC China</td>
<td>Listed</td>
</tr>
<tr>
<td>ENCS Japan</td>
<td>Listed</td>
</tr>
<tr>
<td>NzloC New Zealand</td>
<td>Listed</td>
</tr>
<tr>
<td>PICCS Philippines</td>
<td>Listed</td>
</tr>
<tr>
<td>SWISS Switzerland</td>
<td>Listed</td>
</tr>
</tbody>
</table>

15.2 Chemical safety assessment

Safety assessment : No additional information available.

SECTION 16: Other information

16.1 Hazard ratings

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMIS (USA)</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NFPA (USA)</td>
<td>1</td>
<td>1</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

16.2 Safety Data Sheet information

Revision date (MM/DD/YY) : 12/05/2014
Supersede date (MM/DD/YY) : 09/17/2010

16.3 Notice to reader

The information presented herein is believed to be factual as it has been derived from the works and opinions of persons believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which Chemical Associates – A Division of Univar USA Inc. bears responsibility. The user should review any recommendations in the specific context of the intended use to determine whether they are appropriate.