Thermomelt® HEAT-STIK Markers 119 °F (48 °C), 1800 °F (982 °C)

LA-CO Industries, Inc.

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
according to Canadian Hazardous Products Regulations (HPR)
Date of issue: 03/11/2015
Version: 1.0

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

1.1. Product identifier
Product form: Mixture
Trade name: Thermomelt® HEAT-STIK Markers 119 °F (48 °C), 1800 °F (982 °C)

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture: Temperature indicator

1.3. Details of the supplier of the safety data sheet
LA-CO Industries, Inc.
1201 Pratt Boulevard
Elk Grove Village, IL.  60007-5746
Phone: (847) 956-7600
Fax: (847) 956-9885
E-mail: customer_service@laco.com

1.4. Emergency telephone number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
Classification in accordance with the Globally Harmonized Standard
Aquatic Acute 1 H400
Aquatic Chronic 1 H410
Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labelling
Hazard pictograms (GHS-US): 

Signal word (GHS-US): Warning
Hazard statements (GHS-US): H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
Precautionary statements (GHS-US): P273 - Avoid release to the environment
P391 - Collect spillage
P501 - Dispose of contents/container to an authorised waste collection point

2.3. Other hazards
No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substance
Not applicable

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>% (w/w)</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate</td>
<td>(CAS No) 115-86-6</td>
<td>90.91 in 119 °F</td>
<td>Aquatic Acute 1, H400</td>
</tr>
<tr>
<td>Boron zinc hydroxide oxide</td>
<td>(CAS No) 138265-88-0</td>
<td>91.74 - 92.86 in 1800 °F</td>
<td>Aquatic Acute 1, H400</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16
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SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation: If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
First-aid measures after skin contact: Wash skin with mild soap and water.
First-aid measures after eye contact: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion: Do not give any liquid to the person. Call a POISON CENTER or doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries: Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed
All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture
Fire hazard: No specific fire or explosion hazard.
Reactivity: No dangerous reactions known.

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Do not allow run-off from fire fighting to enter drains or water courses.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
General measures: Avoid contact with skin and eyes. Avoid creating or spreading dust.

6.1.1. For non-emergency personnel
Protective equipment: In case of inadequate ventilation wear respiratory protection.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Where excessive dust may result, use approved respiratory protection equipment.
Emergency procedures: Ventilate area.

6.2. Environmental precautions
Avoid release to the environment. Do not discharge into drains or the environment. Prevent entry to sewers and public waters. Prevent dispersion. Notify authorities if liquid enters sewers or public waters. This product contains hazardous components for the aquatic environment.

6.3. Methods and material for containment and cleaning up
For containment: Contain and collect as any solid. Avoid generating dust.
Methods for cleaning up: Take up in non-combustible absorbent material and shove into container for disposal. Minimize generation of dust.

6.4. Reference to other sections
Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling: Avoid contact with skin and eyes.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions: Store in a dry, cool and well-ventilated place.

7.3. Specific end use(s)
Temperature indicator.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Product Description</th>
<th>ACGIH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermomelt® HEAT-STIK Markers 119 °F (48 °C), 1800 °F (982 °C)</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>ACGIH TWA (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>ACGIH</td>
<td>Not applicable</td>
<td>Cholinesterase inhib</td>
</tr>
<tr>
<td>OSHA</td>
<td>OSHA PEL (TWA) (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>Canada (Quebec)</td>
<td>VEMP (mg/m³)</td>
<td>3 mg/m³</td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls: Avoid dispersal of dust in the air (ie, clearing dust surfaces with compressed air). Either local exhaust or general room ventilation is usually required.
Personal protective equipment: Avoid all unnecessary exposure.
Hand protection: It is a good industrial hygiene practice to minimize skin contact. If dust is formed: Use rubber gloves.
Eye protection: In case of dust production: protective goggles.
Respiratory protection: Where excessive dust may result, use approved respiratory protection equipment. Use air-purifying respirator equipped with particulate filtering cartridges.
Thermal hazard protection: Flame retardant clothing should be used when handling in molten state.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>A solid crayon-like marker.</td>
</tr>
<tr>
<td>Colour</td>
<td>white. Green.</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Varies per product</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>&gt; 1</td>
</tr>
<tr>
<td>Solubility</td>
<td>insoluble in water.</td>
</tr>
</tbody>
</table>
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Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
VOC content : 0 %

SECTION 10: Stability and reactivity

10.1. Reactivity
No dangerous reactions known.

10.2. Chemical stability
Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Avoid creating or spreading dust. Contact with incompatible materials.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Burning produces irritating, toxic and noxious fumes.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>LD50 oral rat</th>
<th>LD50 dermal rabbit</th>
<th>LC50 inhalation rat (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphenyl phosphate (115-86-6)</td>
<td>&gt; 20000 mg/kg</td>
<td>&gt; 10000 mg/kg</td>
<td>&gt; 200 mg/l 1 h</td>
</tr>
<tr>
<td>Boron zinc hydroxide oxide (138265-88-0)</td>
<td>&gt; 10000 mg/kg</td>
<td>&gt; 10000 mg/l</td>
<td>&gt; 5 mg/l</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation : Not classified
Serious eye damage/irritation : Not classified
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : Not classified
Specific target organ toxicity (repeated exposure) : Not classified

<table>
<thead>
<tr>
<th>Substance</th>
<th>NOAEL (subacute, oral, animal/male, 28 days)</th>
<th>NOAEL (subacute, oral, animal/female, 28 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphenyl phosphate (115-86-6)</td>
<td>250 mg/kg bodyweight</td>
<td>4000 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

Aspiration hazard : Not classified
Potential adverse human health effects and symptoms
Likely routes of exposure : Skin and eye contact; Inhalation
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SECTION 12: Ecological information

12.1 Toxicity
Ecology - water : Very toxic to aquatic life with long lasting effects.

<table>
<thead>
<tr>
<th>Compound</th>
<th>LC50 fish</th>
<th>EC50 Daphnia</th>
<th>LOEC (chronic)</th>
<th>NOEC (chronic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>0.4 mg/l 96 h</td>
<td>0.18 (0.18 - 0.32) mg/l 96 h</td>
<td>0.931 mg/l 21 days</td>
<td>0.254 mg/l 21 days</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability
Thermomelt® HEAT-STIK Markers 119 °F (48 °C), 1800 °F (982 °C)
Persistence and degradability May cause long-term adverse effects in the environment.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Persistence and degradability</th>
<th>Biodegradation</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>Readily biodegradable.</td>
<td>83 - 94 % 28 d</td>
</tr>
</tbody>
</table>

Boron zinc hydroxide oxide (138265-88-0)
Persistence and degradability Moderately biodegradable.

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Compound</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>4.63</td>
<td>Not expected to bioaccumulate.</td>
</tr>
<tr>
<td>Boron zinc hydroxide oxide (138265-88-0)</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

12.4 Mobility in soil
No additional information available

12.5 Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Sewage disposal recommendations : Do not dispose of waste into sewer.
Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT and TDG
Transport document description : 119 °F = UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (triphenyl phosphate), 9, III, (E)
1800 °F = UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Boron zinc hydroxide oxide), 9, III, (E)
UN-No.(DOT) : UN3077
Proper Shipping Name (DOT) : 119 °F = ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (triphenyl phosphate)
1800 °F = ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Boron zinc hydroxide oxide)
Department of Transportation (DOT) Hazard Classes : 9 - Class 9 (Miscellaneous dangerous materials)
Packing group (DOT) : III - Minor Danger
ADR
Transport document description : 119 °F = UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (triphenyl phosphate), 9, III, (E)
1800 °F = UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Boron zinc hydroxide oxide), 9, III, (E)
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SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>TSCA Inventory</th>
<th>SARA Section 304 Reportable Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>Listed</td>
<td></td>
</tr>
<tr>
<td>Boron zinc hydroxide oxide (138265-88-0)</td>
<td>Listed</td>
<td>1000 lb</td>
</tr>
</tbody>
</table>

15.2. International regulations

<table>
<thead>
<tr>
<th>Region</th>
<th>Substance</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>CANADA</td>
<td>triphenyl phosphate (115-86-6)</td>
<td>Listed on the Canadian DSL (Domestic Substances List) inventory.</td>
</tr>
<tr>
<td></td>
<td>Boron zinc hydroxide oxide (138265-88-0)</td>
<td>Listed on the Canadian DSL (Domestic Substances List) inventory.</td>
</tr>
</tbody>
</table>

EU-Regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)</td>
</tr>
<tr>
<td>Boron zinc hydroxide oxide (138265-88-0)</td>
<td>Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)</td>
</tr>
</tbody>
</table>

National regulations

Thermomelt® HEAT-STIK Markers 119 °F (48 °C), 1800 °F (982 °C)

All components are listed on the EEC inventory European Inventory of Existing Commercial Chemical Substances (EINECS).
All ingredients are listed on the Canadian Domestic Substances List (DSL) or Non-Domestic Substances List (NDSL).
All ingredients are listed in the Toxic Substances Control Act (TSCA).

15.3. US State regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>State</th>
<th>Right to Know Hazardous Substance List</th>
</tr>
</thead>
<tbody>
<tr>
<td>triphenyl phosphate (115-86-6)</td>
<td>U.S. - New Jersey</td>
<td></td>
</tr>
</tbody>
</table>

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Boron zinc hydroxide oxide (138265-88-0)
U.S. - Massachusetts - Right To Know List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Original Document.


Abbreviations and acronyms:

- ATE: Acute Toxicity Estimate.
- CAS (Chemical Abstracts Service) number.
- CLP: Classification, Labelling, Packaging.
- EC50: Environmental Concentration associated with a response by 50% of the test population.
- GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
- LD50: Lethal Dose for 50% of the test population.
- OSHA: Occupational Safety & Health Administration.
- PBT: Persistent, Bioaccumulative, Toxic.
- STEL: Short Term Exposure Limits.
- TSCA: Toxic Substances Control Act.
- TWA: Time Weight Average.

Other information : None.

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 1 - Must be preheated before ignition can occur.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and not reactive with water.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Aquatic Acute 1</th>
<th>Hazardous to the aquatic environment — Acute Hazard, Category 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Chronic 1</td>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 1</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>

SDS Prepared by: The Redstone Group, LLC
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Dublin, OH USA 43016
T 614-923-7472
www.redstonegrp.com

LACO NA GHS SDS
This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product

11/03/2015 EN (English) SDS Ref.: LACO1409005 7/7