MATERIAL SAFETY DATA SHEET (MSDS)

SOUTH ANTARCTIC KRILL MEAL
(Euphausia superba, Dana)

Prepared by Tharos Ltd
Version April 2009
SECTION 1 - PRODUCT NAME AND COMPANY IDENTIFICATION

Product Name. South Antarctic Krill Meal (*Euphausia superba*)
Synonyms Dried Krill Meal
Chemical family Feed
Use Feed ingredient
Supplier Ocean Trawlers Hong Kong
Room 3508, 35/F
Wu Chung House, 213
Queen's Road East
Wanchai, Hong Kong

Information and Emergency
Phone: +852 2446 8200
Fax: +852 2866 9105
othk@oceantrawlers.com

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43 Shmidt St Office 401
Murmansk, Russia

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Phone: +7 8152 288 198
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othk@oceantrawlers.com

SECTION 2 - COMPOSITION – INFORMATION ON INGREDIENTS

| CAS No | None |
| OSHA PEL | NE (not established) |
| ACGIH TLV | NE (not established) |
| OTHER | 6-ethoxy-1,2 dihydro-2,4 trimethyl quinoline (CAS Reg.Nbr 91-53-2) is eventually added to retard oxidation (also known as Ethoxyquin). Alternative retardant of oxidation are natural antioxidants such as, but not limited to |
| | 1. Naturox liquid composed of mono and diglycerides, natural mixed tocopherols, citric acid and rosemary extract |
| | 2. Termox BCP liquid composed of BHA, propyl gallate and citric acid |
| | 3. Termox liquid FG which is a mixture of BHT and BHA |
| Hazard Symbols | IMO9 or IMO4.2 Transportation symbols |
| RISK PHRASES | Not Listed |
SECTION 3-HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>Appearance:</th>
<th>Reddish and/or pinkish solid powder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Health Effect:</td>
<td>On crustacean-like allergic people might produce irritation, slight eyes congestion and slight difficulty to breath.</td>
</tr>
<tr>
<td>Primary Routes of Entry:</td>
<td>Inhalation/ Ingestion.</td>
</tr>
<tr>
<td>Skin:</td>
<td>No effects expected.</td>
</tr>
<tr>
<td>Ingestion:</td>
<td>This material is a slightly sweet, powder-form solid material.</td>
</tr>
<tr>
<td>Inhalation:</td>
<td>Exposure to high airborne concentration may cause mild respiratory irritation.</td>
</tr>
<tr>
<td>Chronic:</td>
<td>No information found.</td>
</tr>
</tbody>
</table>

This product is liable to heat spontaneously and eventually present auto-combustion risks unless krill meal presents a low fat content and/or it has been effectively anti-oxidant treated and/or it is stored at low temperatures, such as on a cold storage, at room temperatures below 0°C or lower. As a principle, further, storage conditions at a low to very low temperature can be applied if addition of antioxidant is not desired."

Certain conditions, such as contact with strong oxidizing materials, can lead to oxidation and spontaneous combustion depending upon the moisture and oil content of the product.
SECTION 4-FIRST AID MEASURES

No special treatment under ordinary circumstances. Use good personal hygiene and wash thoroughly with soap and water after handling.

If redness or irritation develops, contact a physician.

**Eyes:**
No special treatment under normal circumstances.
Flush eyes with plenty of fresh water.

**Skin:**
No special treatment under normal circumstances.
Flush skin with plenty of fresh water.

**Ingestion:**
No special treatment under normal circumstances.

**Inhalation:**
No special treatment under normal circumstances.
Remove from exposure and move to fresh air immediately.

**Notes to Physician:**
Dried krill meal, made from whole raw krill, is not intended for human consumption based on extensive toxicological studies related to fluoride content in food intended for human consumption.

SECTION 5-FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>Nil at ambient temperature</td>
</tr>
<tr>
<td>Extinguishing media</td>
<td>CO2, dry foam</td>
</tr>
<tr>
<td>Flash point</td>
<td>NA</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>NA</td>
</tr>
<tr>
<td>Auto ignition</td>
<td>The product is liable to auto ignition depending on fat and moisture content.</td>
</tr>
<tr>
<td>Hazardous combustion product</td>
<td>None.</td>
</tr>
</tbody>
</table>

Appropriate measures should be employed to minimize the potential for dust concentrations.
SECTION 6-ACCIDENTAL RELEASE MEASURES

Spillage
Sweep or vacuum up, then dispose.

Environmental precautions
Avoid disposal into drains.

Avoid creating conditions that will contribute to high concentrations of krill meal dust. Carefully sweep or vacuum up into waste container.

SECTION 7-HANDLING AND STORAGE

Handling:
Avoid creating dusty conditions. While no special respiratory protection is required, a dust mask, gloves and other good industrial hygiene practices to minimize worker exposure will result in a more comfortable work environment.

Storage:
Store in a cool dry area in manufacturer’s supplied packaging.
Temperature should be monitored and if it rises above 35°C (or greater than 5°C above ambient temperature, whichever is greater), provisions must be made for moving or cooling the product. Keep the product dry, away from direct sunlight and well ventilated.
Alternatively, use reefer storage condition in which case cold storage should at all times prevent moisture damage

SECTION 8-EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls
It is recommended that all dust control equipment and material transport systems involved are engineered in such a way so to prevent conditions contributing to dust explosions.

Local exhaust
Dust mask, if allergic
Gloves, if allergic
Goggles
SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Powder</td>
</tr>
<tr>
<td>Color</td>
<td>Pinkish, Reddish, Red-Pink, Brownish-reddish</td>
</tr>
<tr>
<td>Odor</td>
<td>Light shrimp, light sweet</td>
</tr>
</tbody>
</table>

SECTION 10- STABILITY AND REACTIVITY

**Chemical Stability:**
Stable under normal conditions of temperature and pressure.

**Conditions to Avoid:** Avoid prolonged storage at elevated temperatures, direct light exposure and high moisture environments.

**Incompatible Materials:** None

**Stability**
Product is stable

**Materials to avoid**
Oxidants

SECTION 11- TOXICOLOGICAL INFORMATION

**Acute Studies:** Material is a non-toxic feed additive
No mortality at the highest tested doses.

**Eye**
If product enters eye it may cause slight irritation

**Skin**
Not expected to be a skin irritant

**Inhaled**
Inhalation of dust during process may cause irritation to sensitive people
SECTION 12-ECOLOGICAL INFORMATION

Dried aqua-grade krill meal is biodegradable and poses no risk to the environment. Dried krill meal and its breakdown products are non-toxic to plant and animal life, and do not accumulate in plant or animal tissue.

Ecotoxicity  No information available
Persistence No information available
Mobility No information available
Environmental fate No information available
Bioaccumulative No information available

SECTION 13-DISPOSAL CONSIDERATIONS

The product should be disposed off in suitable waste containers and treated as a solid waste.

Dispose in accordance with federal, state and local regulations.

SECTION 14-TRANSPORT INFORMATION

Following precautions are to be taken during transportation, storage and handling:

• Keep original packaging container dry
• Keep transportation containers dry
• Keep container in a well ventilated place
• Keep away from strong oxidizing agents and strong acids
• Keep away from heat
• This material and its packaging material must be disposed of in a safe way
• Keep temperature not exceeding 35º or 5ºC above the ambient temperature; whichever is higher, at time of the shipment
• When using reefer containers and/or cold storage prevent excess moisture conditions
  • Proper Shipping Name & Information:
  • Hazard Class: IMO subject to antioxidant application
  • DOT Shipping Label: IMO
  • Packaging Exemptions: Non-hazardous
  • Packaging Requirements: Non-hazardous
  • Freight Classification: IMO
SECTION 15-REGULATORY INFORMATION

This product is classified as IMO9 when it has been stabilized with antioxidant or IMO4.2 if it hasn't been treated with antioxidant.

Proper IMO labels must be used if transported on either dry or reefer containers.

SECTION 16-OTHER INFORMATION

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