1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

<table>
<thead>
<tr>
<th><strong>Product Name</strong></th>
<th>ETHANOX® 330 Antioxidant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REACH - Registration number</strong></td>
<td>N/A - Deadline : 31.05.2013</td>
</tr>
<tr>
<td><strong>General function</strong></td>
<td>Antioxidant</td>
</tr>
</tbody>
</table>
| **Company** | ALBEMARLE EUROPE SPRL  
Rue du Bosquet 9  
B-1348 LOUVAIN-LA-NEUVE (SUD)  
BELGIUM  
Tel: +32-10-48.17.11  
Fax H&E Dpt: +32-10-48.17.39 |
| 'Competent Body for SDS' | Health, Safety & Environment - Louvain-la-Neuve (Belgique)  
ALBEMARLE Europe SPRL  
e-mail : HSE.LLN@albemarle.com |
| **Emergency telephone number** | +32.(0)70.233.201 (CARECHEM 24) |
| **National Anti-Poison Center** | UK: +44 844 892 0111  (National Poisons Information Service) |
2. HAZARDS IDENTIFICATION

Most Important Hazards

Human Effects
Not expected to be acutely toxic. Not expected to be an irritant.

Environmental Effects
May cause long-term adverse effects in the aquatic environment.

Other Effects

Classification

Not regulated under the criteria of Directive 67/548/EC.

EC Regulation 1272/2008 (CLP)

Chronic aquatic toxicity
Category 4 ; H413

EU Labelling

EC Regulation 1272/2008 (CLP)

Signal Word
None

Hazard Statements
H413 - May cause long lasting harmful effects to aquatic life

Precautionary Statements
P273 - Avoid release to the environment
P501 - Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family
Alkylated phenol.

Chemical Name
1,3,5-Trimethyl-2,4,6-tris (3,5-di-tert-butyl-4-hydroxy-benzyl)benzene.

Formula
C54H78O3

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>EC No.</th>
<th>REACH No.</th>
<th>Index No.</th>
<th>Weight %</th>
<th>C&amp;L-DSD</th>
<th>C&amp;L-CLP</th>
<th>Haz.st</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,3,5-T</td>
<td>1709-70-2</td>
<td>216-971-0</td>
<td>-</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>Aquatic Chronic 4</td>
<td>H413</td>
</tr>
<tr>
<td>Trimethyl-2,4,6-tris (3,5-di-tert-butyl-4-hydroxy-benzyl)benzene</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Immediate Medical Assistance
No
Skin Contact
After contact with skin, wash immediately with plenty of water.

Eye contact
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Inhalation
Move to fresh air.

Ingestion
Give 500 ml water to drink. Do not induce vomiting.

Emergency Equipment
Ensure that eyewash stations and safety showers are close to the workstation location.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide, dry chemicals, foam, water spray (mist).

Unsuitable Extinguishing Media
None

Exposure Hazards
Do not breathe smoke and vapour.

Protective equipment and precautions for firefighters
Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation

Environmental Precautions
Contain any spill with dikes or absorbents to prevent migration and entry into sewers or streams. May require excavation of contaminated soil.

Methods for Clean-up
Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Handling
This product may present a dust explosion hazard. Employ bonding, grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity. Explosion hazard can be reduced by good housekeeping, prevention of the escape of dust from process equipment and prevention of accumulation of dust on overhead, horizontal surfaces. In addition, a continuing effort should be made to control ignition sources. Local exhaust is needed at source of dust. Mechanical ventilation is recommended.

Dust Explosion Properties
Compounds containing phenolic groups are known to have severe dust explosivity rating.

Storage
Keep containers tightly closed in a cool, well-ventilated place. Keep away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure limits
no data available

Exposure controls
Personal Protective Equipment:

- **Skin Protection**: Wear protective gloves/clothing.
- **Eye Protection**: Goggles. Face-shield.
- **Hand protection**: Wear suitable gloves resistant to chemical penetration.
- **Respiratory Protection**: Approved dust, fume and organic respirator when working in irritating fumes from decomposition.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Powder.</td>
</tr>
<tr>
<td>Color</td>
<td>White.</td>
</tr>
<tr>
<td>Odor</td>
<td>Odourless.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>244°C</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt;133 Pa(20°C)</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition Coefficient (log Pow)</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Other information: No data available

### 10. STABILITY AND REACTIVITY

**Stability**

Compounds containing phenolic groups are known to have severe dust explosivity rating. Employ bonding, grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity. Explosion hazard can be reduced by good housekeeping, prevention of the escape of dust from process equipment and prevention of accumulation of dust on overhead, horizontal surfaces. In addition, a continuing effort should be made to control ignition sources.

**Materials to avoid**: Avoid strong reducing agents. Strong oxidizing agents.

**Conditions to Avoid**: Keep away from heat. Avoid dust formation.

**Hazardous decomposition products**: Carbon oxides.

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

- LD50 Oral: >2000 mg/kg (rat)
- LD50 Dermal: >15000 mg/kg (rabbit)
Irritation
Not irritating.

Sensitization
No information available

Chronic Toxicity
No information available

Mutagenic Effects
No information available

Other Toxicological Information
No information available

### 12. ECOLOGICAL INFORMATION

Ecotoxicity
No information available

Persistence/Degradability
No information available

Bioaccumulative Potential
No information available

Mobility in Environmental Media
No information available

Other information
May cause long-term adverse effects in the aquatic environment.

### 13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Dispose in a safe manner in accordance with local/national regulations.

### 14. TRANSPORT INFORMATION

REGULATED

<table>
<thead>
<tr>
<th>Mode</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEA</td>
<td>no</td>
</tr>
<tr>
<td>ROAD/RAIL</td>
<td>no</td>
</tr>
<tr>
<td>AIR</td>
<td>no</td>
</tr>
</tbody>
</table>

SEA

<table>
<thead>
<tr>
<th>Classification</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMO Class</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Packing Group</td>
<td>Not regulated</td>
</tr>
<tr>
<td>UN-No</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IMO Labelling and Marking</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Proper Shipping Name</td>
<td>Not regulated</td>
</tr>
<tr>
<td>EmS</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Marpol - Annex II</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Marpol - Annex III</td>
<td>Not regulated</td>
</tr>
<tr>
<td>Transport Description</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>
14. TRANSPORT INFORMATION

ROAD/RAIL
ADR/RID Class Not regulated
Packing Group Not regulated
UN-No Not regulated
Hazard Identification No Not regulated
ADR/RID-Labelling/Marking Not regulated
Proper Shipping Name Not regulated
Transport Description Not regulated

AIR
IATA/ICAO Class Not regulated
Packing Group Not regulated
UN-No Not regulated
IATA/ICAO Labelling/Marking Not regulated
Passenger Aircraft Not regulated
Cargo aircraft only Not regulated
Proper shipping name Not regulated
Transport Description Not regulated

Uncleaned empty packagings/transport equipments

ROAD/RAIL (ADR/RID)
SEA (IMO/IMDG)

15. REGULATORY INFORMATION

EU Labelling
EC Regulation 1272/2008 (CLP)
SEE SECTION 2.
Replaces 67/548/EC as from December 1st 2010.

Not regulated under the criteria of Directive 67/548/EC.

Substance has been pre-registered.
REACH - Registration number N/A - Deadline : 31.05.2013

Other information
Germany : WGK = 1

<table>
<thead>
<tr>
<th>International Inventories</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>AICS</th>
<th>ENECs</th>
<th>ELINCS</th>
<th>ENCS</th>
<th>KECL</th>
<th>PICCS</th>
<th>CHINA</th>
<th>NZIoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOX® 330 Antioxidant</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

(X) Complies (-) Does not Comply
16. OTHER INFORMATION

Text of R phrases mentioned in Section 3
None.

Hazard Statements
H413 - May cause long lasting harmful effects to aquatic life

ETHANOX is a registered trade mark of ALBEMARLE CORPORATION.

Prepared By
Health & Environment - EMA of ALBEMARLE EUROPE SPRL
FOR ADDITIONAL NON-EMERGENCY MSDS INFORMATION, CONTACT:
Health & Environment
Parc Scientifique Einstein
Rue du Bosquet, 9
B-1348 Louvain-la-Neuve (Sud)
Belgium
Phone No.: +32-10-48.17.38

Revision Date: 05-Apr-2011

Revision Summary
REACH - CLP.

Although the information and recommendations set forth herein are presented in good faith and believed to be correct as of the date hereof, ALBEMARLE EUROPE SPRL makes no representation as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving the same will make their own determination as to its safety and suitability for their purposes prior to use. In no event will ALBEMARLE EUROPE SPRL be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information. No representations or warranties either expressed or implied, of merchantability, fitness for a particular purpose or of any other nature, are made hereunder with respect to information or the product to which the information refers.

End of Safety Data Sheet