Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:
Identification on the label/Trade name: N-(cyclohexylthio)phthalimide
Additional identification: Cyclohexylthiophthalimide; N-Cyclohexylsulfenylphthalimide
Identification of the product: CAS# 17796-82-6; EC# 241-774-1
Index Number: Not available.
REACH registration No.: Not available.

1.2 Relevant identified uses of the substance and uses advised against:
1.2.1 Identified uses:
It is a high effective pre-vulcanization inhibitor of rubbers especially of diene compounds with cure system consisting of sulfur and tiazole but mainly sulfenamide accelerators.

1.2.2 Uses advised against:
Not available.

1.3 Details of the supplier of the safety data sheet:
Supplier(Only representative): Chemical Inspection & Regulation Service Limited
Supplier(Manufacturer): SHANGHAI ROKEM INTERNATIONAL CO., LTD.
Address: 9D, DOUBLE DOVE GREAT TOWER, 438 PUDIAN ROAD, SHANGHAI
Contact person(E-mail): robertliu@rokem.com
Telephone: +86-532-88181138
Fax: -

1.4 Emergency telephone Number:
+353 41 980 6916
Available outside office hours? YES

Section 2 Hazards Identification

2.1 Classification of the substance/mixture
2.1.1 Classification:
The substance is classified as following according to 67/548/EEC and REGULATION (EC) No 1272/2008:

<table>
<thead>
<tr>
<th>REGULATION (EC) No 1272/2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard classes/Hazard categories</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
</tr>
<tr>
<td>Aquatic Acute 1</td>
</tr>
<tr>
<td>Aquatic Chronic 1</td>
</tr>
</tbody>
</table>

For full text of H- phrases: see section 2.2.

<table>
<thead>
<tr>
<th>67/548/EEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazards characteristics</td>
</tr>
<tr>
<td>-</td>
</tr>
</tbody>
</table>
2.2 label elements

Hazard Pictograms:

Signal Word(S): Warning

Hazard Statement:
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement
P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
P321: Specific treatment (see information on this label)
P363: Wash contaminated clothing before reuse.
P391: Collect spillage.
P501: Dispose of contents/container in according with local regulation.

2.3 Other hazards

The substance is not considered a PBT/vPvB.

Section 3 Composition/information on ingredients

Substance/Mixture: Substance

Ingredient(s): Chemical Name | Registration No. | CAS No. | EC No. | Concentration
--- | --- | --- | --- | ---
N-(cyclohexylthio)phthalimide | N/A | 17796-82-6 | 241-774-1 | 96%

Section 4 First aid measures

4.1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In case of inhalation:
Remove from exposure, take exposed person to fresh air.

4.1.2 In case of skin contact:
Wash skin with warm water and treat with protective cream.

4.1.3 In case of eyes contact:
Wash out the eye with plenty of clean water.

4.1.4 In case of ingestion:
Drink cc 0.5 l lukewarm water, do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed
May cause an allergic skin reaction.
4.3 Indication of any immediate medical attention and special treatment needed
If skin irritation or rash occurs, get medical advice/attention.

Section 5 Fire-Fighting measures

5.1 Extinguishing media:
Suitable extinguishing media: Water foam.
Unsuitable extinguishing media: Carbon dioxide.

5.2 Special hazards arising from the substance or mixture
CO2 + SO2 + NOx, if insufficient air by combustion toxic CO may arise.

5.3 Special fire fighting methods and special protective actions for fire-fighters:
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:
6.1.1 For non-emergency personnel: Prevent the contact of the substance with glowing articles and prevent the initiating of fire or explosion of CTP dust with air.
6.1.2 For emergency responders: Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

6.2 Environmental Precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Do not allow material to be released to the environment without proper governmental permits. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

6.3 Methods for Containment and Cleaning up: Collection of contaminated dust into a vessel for waste or liquidation in incinerating plant.

6.4 Reference to other sections: See Section 7 for information on safe handling.
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

6.5 Additional information: Not applicable.

Section 7 Handling and storage

7.1 Precautions for safe handling:
7.1.1 Protective measures: To handle as with flammables, of which the dust with air can be explosive. Electronic installation in spaces of handling with Duslin® P must be in accordance with regulations for explosive environment. Handling with opened fire is forbidden. The empty wrappings from Duslin® P must be rid of substance rests on walls before repairing (cleaning by means of detergents etc.). The empty paper bags to liquidate in incinerating plant of wastes.

7.1.2 Advice on general occupational hygiene: Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities: CTP is stored in original multi-layer paper bags or big-bags on pallets or in closed tanks with venting trough dust filter under slight overpressure of nitrogen atmosphere. CTP tends to caking, consequence is proportional to the higher temperature, pressure and storage time. Maximum storage temperature is 35°C. Storage life in undamaged original packaging is one year under the observation of storage conditions. Adequate amount and volume of extinguishing technique is needed. Electric
installation and lighting must be suitable into explosive space.

7.3 Specific end use(s):
Not applicable.

Section 8 Exposure Controls/Personal Protection

8.1 Control parameters:

8.1.1 Occupational exposure limits:
Not available

8.1.2 Additional exposure limits under the conditions of use:
Not available

8.1.3 DNEL/DMEL and PNEC-Values:
Not available

8.2 Exposure controls

8.2.1 Appropriate engineering controls:
Dust mixed with air can be explosive so that prevent of excess dusting, ensure a sufficient ventilation.

8.2.2 Individual protection measures, such as personal protective equipment:

Eye/face protection:
Use suitable protective goggles.

Hand protection:
Use suitable protective gloves.

Body protection:
Put on suitable protective clothes.

Respiratory protection:
Keep the lowest possible level of the dust concentration in air, in case of dusting, use a respirator.

Thermal hazards:
No information is available.

8.2.3 Environmental exposure controls:
Prevent uncontrolled release to environment.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
Solid, Powder

Colour:
White

Odour:
Slight

Odour threshold:
Not available

pH:
Not available

Melting point/range (°C):
91-95°C (ca. 101.3 kPa)

Boiling point/range (°C):
Not available

Flash point (°C):
150.3-156.5°C (101.325 kPa)

Evaporation rate:
Not available

Flammability limit - lower (%):
Not available

Flammability (solid, gas):
Non flammable.

Ignition temperature (°C):
Not available

Upper/lower flammability/explosive limits:
Not available

Vapour pressure:
Not available

Vapour density:
Not available

Relative Density:
Not available

Bulk density (kg/m³):
ca. 1.354 g/cm³ (20°C)

Water solubility (g/l):
12.4 mg/L (20°C)

n-Octanol/Water (log Po/w):
Not available

Auto-ignition temperature:
Not available

Decomposition temperature:
Not available

Product name: N-(cyclohexylthio)phthalimide
SDS EU
Version #: 1.0       Revision date: 17-10-2013.       Issue date: 17-10-2013.
Viscosity, dynamic (mPa.s): Not relevant, substance is solid
Explosive properties: Non explosive
Oxidising properties: Not oxidizing
Molecular Formula: C14H15NO2S
Molecular Weight: 261.34

9.2. Other information:
Fat solubility(solvent– oil to be specified) etc: Not available
Surface tension: Not available
Dissociation constant in water( pKa): Not available
Oxidation-reduction Potential: Not available
Specific gravity: Not available

Section 10 Stability and reactivity

10.1 Reactivity: The substance is stable under normal storage and handling conditions.
10.2 Chemical stability: Stable at room temperature in closed containers under normal storage and handling conditions. It decomposes at temperature around 120°C.
10.3 Possibility of hazardous reactions: No dangerous reactions are known.
10.4 Conditions to avoid: Incompatible materials. High temperature.
10.5 Incompatible materials: Strong oxidizing agents.
10.6 Hazardous decomposition products: CO2 + SO2 + NOx, if insufficient air by combustion the toxic CO may arise.

Section 11 Toxicological information

11.1 Toxicokinetics, metabolism and distribution
Non-human toxikological data: Not available

11.2 Information on toxicological effects
Acute toxicity:
LD50(Oral, Rat): $\geq 2000$ mg/kg bw
LD50(Dermal, Rabbit): $\geq 2000$ mg/kg bw
LC50(Inhalation, Rat): Not available
Skin corrosion/Irritation: Slightly irritating.
Serious eye damage/irritation: Moderately irritating.
Respiratory or skin sensitization: May cause an allergic skin reaction.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Not classified
STOT- single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

Section 12 Ecological information

Toxicity:
<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Time</th>
<th>Species</th>
<th>Method</th>
<th>Evaluation</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>0.69mg/l</td>
<td>96h</td>
<td>Fish</td>
<td>OECD 203</td>
<td>N/A</td>
</tr>
<tr>
<td>EC50</td>
<td>1.21 mg/L</td>
<td>48h</td>
<td>Daphnia</td>
<td>OECD 202</td>
<td>N/A</td>
</tr>
<tr>
<td>EC50</td>
<td>&gt; 0.093 mg/L</td>
<td>72h</td>
<td>Algae</td>
<td>OECD 201</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Persistence and degradability: Not readily biodegradable.
Bioaccumulative potential: Not available.
Mobility in soil: Not available.
Results of PBT&vPvB assessment: The substance is not considered a PBT/vPvB.
Other adverse effects: Very toxic to aquatic life with long lasting effects.

Section 13 Disposal considerations

13.1 Waste treatment methods
The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

13.2 Product / Packaging disposal:
If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

Section 14 Transport information

<table>
<thead>
<tr>
<th>Land transport(ADR/RID)</th>
<th>Sea transport (IMDG)</th>
<th>Air transport (ICAO/IATA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN-Number:</td>
<td>3077</td>
<td>3077</td>
</tr>
<tr>
<td>UN Proper shipping name:</td>
<td>Environmentally hazardous substance, solid, n.o.s. (N-(cyclohexylthio)phthalimide)</td>
<td>Environmentally hazardous substance, solid, n.o.s. (N-(cyclohexylthio)phthalimide)</td>
</tr>
<tr>
<td>Transport hazard Class:</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Packaging group:</td>
<td>III</td>
<td>III</td>
</tr>
<tr>
<td>Environmental hazards:</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Special precautions for user:</td>
<td>See section 2.2</td>
<td>See section 2.2</td>
</tr>
<tr>
<td>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</td>
<td>IBC08</td>
<td>IBC08</td>
</tr>
</tbody>
</table>

Section 15 Regulation information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Relevant information regarding authorization: Not applicable.
Relevant information regarding restriction: Not applicable.
Other EU regulations: Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
Other National regulations: Not applicable
Chemical Safety Assessment has been carried out? YES X NO

Section 16 Other information

Product name: N-(cyclohexylthio)phthalimide
SDS EU Version #: 1.0 Revision date:17-10-2013. Issue date: 17-10-2013.
16.1 Indication of changes
   Version 1.0  Amended by EU No 453/2010

16.2 Relevant R-phrases (number and full text):
   R43 May cause sensitisation by skin contact.
   R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

16.3 Training instructions:
   Not applicable.

16.4 Further information:
   This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.5 Notice to reader:
   Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

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