1. identification of the substance/preparation and of the company/undertaking

Date issued 2011-02-21
Revision
Product name DYNOMIT
Article no.
Product group NG explosive
Company name Orica Denmark A/S
Postal address Smedeland 7
Postcode 2600
Place name Glostrup
Country Denmark
Tel +4543451538
Fax +4543432270
E-mail johan.svaerd@orica.com
Prepared by

2. hazards identification

Classification E; R2
Hazard description
Fire and explosion:
Risk of explosion by shock, friction, fire or other sources of ignition.
Risk of explosion, an uncontrolled explosion may cause great physical damage.

Health:
The product is not classified as hazardous to health.

Nitroglycol represents the most sudden danger of poisoning.
At explosion, toxic gases of NO, NO2 and CO, CO2 are evolved, posing a potential risk when inhaled, and irritating the respiratory system

Environment:
The product is not classified as harmful to the environment.

3. composition/information on ingredients

Component name | Identification | Labelling/classification | Contents |
--- | --- | --- | --- |
Ethylene dinitrate | CAS no.: 628-96-6 EC no.: 211-063-0 Index no.: 603-032-00-9 | T+,E; R2, R26/27/28, R33 | 17 - 30 % |
Cellulose Tetranitrate | CAS no.: 9004-70-0 | F, R11 | < 2 % |
Ammonium nitrate | CAS no.: 6484-52-2 EC no.: 229-347-8 | O, R8, R9 | 50 - 70 % |

Column headings
CAS no. = Chemical Abstracts Service; EU (Einecs or Elincs number) = European inventory of Existing Commercial Chemical Substances; Ingredient name = Name as specified in the substance list (substances that are not included in the substance list must be translated, if possible). Contents given in %, %wt/wt, %vol/wt, %vol/vol, mg/m3, ppb, ppm, weight%, vol%.

HH/HF/HE
T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritating, E = Explosive, O = Oxidizing, F+ = Extremely flammable, F = Very flammable, N = Environmental hazard

Component comments
See section 16 for explanation of Risk-phrases listed above.

4. first-aid measures

General
If in doubt, get medical advice. The first aid action mentioned below are for
5. fire-fighting measures

Suitable extinguishing media
Extinguish surrounding fires with suitable extinguisher.

Improper extinguishing media
Do not fight fires involving explosives, risk of explosion. Fire in explosives can not be extinguished with any fire fighter equipment. Fire fighting should be limited to preventing spread of other fires.

Fire and explosion hazards
Risk of explosion by shock, friction, fire or other sources of ignition. Explosion or fire may create toxic vapours such as: Nitrogen oxides. Carbon oxides. Ammonia.

Personal protective equipment
Use fresh air equipment when the product is involved in fire. In case of evacuation, an approved protection mask should be used. See also sect. 8.

Other Information
Evacuate all personnel to a predetermined safe location. Notify authorities in accordance with emergency response procedures. If possible without risk, immediately remove containers close to the fire.

6. accidental release measures

Personal precautions
Use protection equipment as given in section 8. Avoid contact with skin or inhalation of spillage, dust or vapour.

Environmental precautions
Do not allow to enter into sewer, water system or soil.

Methods for cleaning
Explosives with intact packaging may be put in containers by hand. Sweep up residues with non-sparking tools and remove. The product is hazardous waste and should be transferred to a closable, labelled salvage container for disposal by an appropriate method(See sect. 13)

Other instructions

7. handling and storage

Handling
Only to be handled by authorized personnel. Place the explosives under supervision and unavailable for persons not concerned. Avoid smoking and use of open fire. Protect against heating. Protect against physical damage and/or friction.

Storage
Store separated from: igniters. Store in tightly closed container. Storage room must be locked and secured from fire. Store in cool, dry, well-ventilated location. Keep away from heat, flame, ignition sources and strong shock. To be stored at temperatures between 0 and 30 °C. Store at temperature below 65°C.


Special risks and properties
Risk of explosion by shock, friction, fire or other sources of ignition.

8. exposure controls/personal protection

Exposure limit values

<table>
<thead>
<tr>
<th>Component name</th>
<th>Identification</th>
<th>Unit</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene dinitrate</td>
<td>CAS no.: 628-96-6</td>
<td>8h: 0.03 ppm</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td>EC no.: 211-063-0</td>
<td>8h: 0.18 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Index no.: 603-032-00-9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Carbon dioxide  
CAS no.: 124-38-9  
EC no.: 204-696-9  
8h: 9000 mg/m³  
2007

Carbon monoxide  
CAS no.: 630-08-0  
EC no.: 211-128-3  
Index no.: 006-001-00-2  
8h: 25 ppm  
8h: 29 mg/m³, 4)  
2007

Nitrogen Dioxide  
CAS no.: 10102-44-0  
EC no.: 233-272-6  
Index no.: 007-002-00-0  
8h: 0,6 ppm  
8h: 1,1 mg/m³, 9)  
2007

Nitrogen oxide  
CAS no.: 10102-43-9  
EC no.: 233-271-0  
8h: 25 ppm  
8h: 30 mg/m³  
2007

### Exposure controls

**Other Information**  
The given safety equipment is a suggestion. Risk assessment (actual risk) may lead to other requirements.

**Occupational exposure controls**  
No eating, drinking or smoking while working with this material. Wash hands at the end of each work shift and before eating, smoking and using the toilet.

**Respiratory protection**  
Normally not required. If ventilation is insufficient, use a respirator with A filter.

**Hand protection**  
Use gloves suitable for the work. When handling explosive residue, use gloves from resistant material, eg.: Nitrile.

**Eye protection**  
Wear approved chemical safety goggles where eye exposure is reasonably probable.

**Skin protection (other than of the hands)**  
Wear appropriate clothing to prevent any possibility of skin contact.

**Other Information**  
Eye wash facilities should be available when handling this product. Clothing that becomes wet or contaminated should be changed.

### 9. Physical and chemical properties

**Physical state**  
Jelly-like mass packed in paper or plastic-film tubes

**Odour**  
Sweetish

**Colour**  
Reddish.

**Solubility in water**  
Very water resistant.

**Specific gravity**  
Value: 1.4-1.5 kg/dm³

**Explosion limit**  
Value: > 159 °C

### 10. Stability and reactivity

**Conditions to avoid**  
May detonate with impact, friction or on heating.

**Hazardous decomposition products**  
Thermal decomposition or combustion may liberate carbon oxides (COx) and other toxic gases or vapours. Nitrous gases (NOx). Ammonia.

**Stability**  
Stable under normal temperature conditions and recommended use.

### 11. Toxicological information

**Other information regarding health hazards**

**General**  
With uncartridged product, the risks are connected with the ingredient nitroglycerol.

**Inhalation**  
Very toxic by inhalation. Symptoms like headache, fatigue and nausea may appear.

**Skin contact**  
Very toxic in contact with skin. Skin penetration possible.

**Eye contact**  
Moderately irritating.

**Ingestion**  
Very toxic if swallowed.

**Chronic effects**  
Contains components which have cumulative effects.

**Sensitisation**  
Sensitizing properties are not known.

**Carcinogenicity**  
Carcinogenic properties are not known.

**Teratogenic properties**  
Effects on fetus development are not known.

**Reproductive toxicity**  
Effects harmful to reproduction are not known.

**Mutagenicity**  
Mutagenic properties are not known.
### 12. Ecological Information

#### Other Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>The product is not classified as dangerous for the environment. Uncartridge product is toxic to aquatic organisms.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td>The product is water resistant. Ammonium nitrate will over time be released and it is soluble in water.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>The product is heavily biodegradable.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>Not expected to bioaccumulate.</td>
</tr>
</tbody>
</table>

### 13. Disposal Considerations

<table>
<thead>
<tr>
<th>Product classified as hazardous waste</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging classified as hazardous waste</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Specify the appropriate methods of disposal

- Dispose of in a regulated landfill site or other method for hazardous or toxic wastes. Residues of explosives must immediately be removed for intermediate storage and disposed for safely destruction. Product and package is hazardous waste.
- Deliver to approved depot.

Product disposal is regulated by the Norwegian Ministry of Government Administration and Reform under the supervision of Directorate for Civil Protection and Emergency Planning.

### 14. Transport Information

<table>
<thead>
<tr>
<th>Proper Shipping Name</th>
<th>EXPLOSIVE, BLASTING, TYPE A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product name (national)</td>
<td>SPRENGSTOFF, TYPE A</td>
</tr>
<tr>
<td>Dangerous goods ADR</td>
<td>Status: Yes</td>
</tr>
<tr>
<td></td>
<td>UN no.: 0081</td>
</tr>
<tr>
<td></td>
<td>Class: 1</td>
</tr>
<tr>
<td></td>
<td>Other applicable information.: Classification code: 1.1 D</td>
</tr>
<tr>
<td>Dangerous goods RID</td>
<td>Status: Yes</td>
</tr>
<tr>
<td></td>
<td>UN no.: 0081</td>
</tr>
<tr>
<td></td>
<td>Class: 1</td>
</tr>
<tr>
<td></td>
<td>Other applicable information.: Classification code: 1.1 D</td>
</tr>
<tr>
<td>Dangerous goods IMDG</td>
<td>Status: Yes</td>
</tr>
<tr>
<td></td>
<td>UN no.: 0081</td>
</tr>
<tr>
<td></td>
<td>Class: 1</td>
</tr>
<tr>
<td></td>
<td>EmS: F-B, S-Y</td>
</tr>
<tr>
<td>Dangerous goods ICAO/IATA</td>
<td>Other applicable information.: Forbidden</td>
</tr>
</tbody>
</table>

### 15. Regulatory Information

#### Hazard Symbol

![Explosive Symbol](image)

<table>
<thead>
<tr>
<th>R phrases</th>
<th>R2 Risk of explosion by shock, friction, fire or other sources of ignition.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S phrases</td>
<td>S28 After contact with skin, wash immediately with plenty of soap and water.</td>
</tr>
<tr>
<td></td>
<td>S35 This material and its container must be disposed of in a safe way.</td>
</tr>
<tr>
<td></td>
<td>S36/37 Wear suitable protective clothing and gloves.</td>
</tr>
<tr>
<td></td>
<td>S41 In case of fire and/or explosion do not breathe fumes.</td>
</tr>
<tr>
<td></td>
<td>S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</td>
</tr>
<tr>
<td>References (laws/regulations)</td>
<td>Dangerous goods regulation.</td>
</tr>
</tbody>
</table>
### 16. other information

| List of relevant R phrases (under headings 2 and 3). | R11 Highly flammable.  
R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.  
R2 Risk of explosion by shock, friction, fire or other sources of ignition.  
R33 Danger of cumulative effects.  
R8 Contact with combustible material may cause fire.  
R9 Explosive when mixed with combustible material. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended restrictions on use</td>
<td>The product can only be handed out to personnel that have valid permits issued by the police</td>
</tr>
<tr>
<td>Information which has been added, deleted or revised</td>
<td>New Safety Data Sheet</td>
</tr>
<tr>
<td>Supplier’s notes</td>
<td>Information in this document is to be made available for all who handle the product.</td>
</tr>
<tr>
<td>Checking quality of information</td>
<td></td>
</tr>
<tr>
<td>Responsible for safety datasheet</td>
<td>Orica Sweden AB</td>
</tr>
</tbody>
</table>