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

1.1 Identification of the substance or preparation:
Product name : SoudaFoam D&W (Gun)

1.2 Use of the substance or the preparation:
Polyurethane foam

1.3 Company/undertaking identification:
SOUDAL N.V.
Everdognenlaan 18-20
B-2300 Turnhout
Tel. : +32 14 42 42 31
Fax : +32 14 44 39 71

1.4 Telephone number for emergency:
+32 14 58 45 45
Brandweerinformatiecentrum voor gevaarlijke stoffen (B.I.G.)
Technische Schoolstraat 43 A, B-2440 Geel

2. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>CAS No.</th>
<th>Conc. in %</th>
<th>Hazard symbol</th>
<th>Risks (R-phrases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>polymethylenepolyphenylisocyanate</td>
<td>9016-87-9</td>
<td>&gt; 20</td>
<td>Xn</td>
<td>20-36/37/38-42/43 (1)</td>
</tr>
<tr>
<td>dimethyl ether</td>
<td>115-10-6  204-065-8</td>
<td>1 - &lt;15</td>
<td>F+</td>
<td>12 (1)</td>
</tr>
<tr>
<td>propane</td>
<td>74-98-6  200-827-9</td>
<td>1 - &lt;5</td>
<td>F+</td>
<td>12 (1)</td>
</tr>
<tr>
<td>isobutane</td>
<td>75-28-5  200-857-2</td>
<td>1 - &lt;10</td>
<td>F+</td>
<td>12 (1)</td>
</tr>
</tbody>
</table>

(1) For R-phrases in full: see heading 16

3. Hazards identification

- Extremely flammable
- Harmful by inhalation
- Irritating to eyes, respiratory system and skin
- May cause sensitization by inhalation and skin contact
4. **First aid measures**

4.1 **Eye contact:**
- Rinse immediately with plenty of water
- Seek medical advice

4.2 **Skin contact:**
- Rinse immediately with plenty of water
- If irritation persists: seek medical advice

4.3 **After inhalation:**
- Remove the victim into fresh air
- Seek medical advice

4.4 **After ingestion:**
- Never give water to an unconscious person
- Do not induce vomiting
- Seek medical advice

5. **Fire-fighting measures**

5.1 **Suitable extinguishing media:**
- Quantities of water
- Polyvalent foam
- BC powder
- Carbon dioxide

5.2 **Unsuitable extinguishing media:**
- None

5.3 **Special exposure hazards:**
- On burning: release of toxic and corrosive gases/vapours: phosphorus oxides, hydrogen chloride, carbon monoxide and carbon dioxide
- Gas/vapour spreads at floor level: ignition hazard
- Gas/vapour flammable with air within explosion limits
- Aerosol may explode under the effect of heat

5.4 **Instructions:**
- Dilute toxic gases with water spray
- Take account of toxic firefighting water
- Do not move the load if exposed to heat

5.5 **Special protective equipment for firefighters:**
- Heat/fire exposure: compressed air/oxygen apparatus

6. **Accidental release measures**

6.1 **Personal protection/precautions:**
- See headings 8.2/13

6.2 **Environmental precautions:**
- Use appropriate containment to avoid environmental contamination

6.3 **Methods of cleaning up:**
- Allow product to solidify and remove it by mechanical means
- Remove uncured foam with acetone
7. Handling and storage

7.1 Handling:
- Observe very strict hygiene - avoid contact
- In case of insufficient ventilation: keep naked flames/sparks away
- Remove contaminated clothing immediately
- Clean contaminated clothing

7.2 Storage:
- Keep out of direct sunlight
- Store in a cool area
- Store in a dry area
- Keep away from: heat sources, ignition sources, acids, bases

<table>
<thead>
<tr>
<th>Storage temperature</th>
<th>&lt; 50 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity limit</td>
<td>N.D. kg</td>
</tr>
<tr>
<td>Storage life</td>
<td>365 days</td>
</tr>
<tr>
<td>Materials for packaging</td>
<td>suitable</td>
</tr>
</tbody>
</table>

7.3 Specific uses:
- See information supplied by the manufacturer

8. Exposure controls / Personal protection

8.1 Exposure limit values:

**POLYMETHYLENE POLYPHENYL ISOCYANATE:**

- **WEL-TEL**: 0.02 (NCO) mg/m³, 0.07 (NCO) ppm
- **WEL-STEL**: 0.07 (NCO) mg/m³, 0.07 (NCO) ppm

**DIMETHYL ETHER:**

- **WEL-TEL**: 766 mg/m³, 400 ppm
- **WEL-STEL**: 958 mg/m³, 500 ppm
- **TRGS 900**: 1900 mg/m³, 1000 ppm
- **MAK**: 1900 mg/m³, 1000 ppm
- **MAC-TGG 8 h**: 950 mg/m³
- **MAC-TGG 15 min.**: 1500 mg/m³
- **VME-8 h**: 1920 mg/m³, 1000 ppm
- **VLE-15 min.**: - mg/m³, - ppm
- **GWBB-8 h**: 1920 mg/m³, 1000 ppm
- **GWK-15 min.**: - mg/m³, - ppm
- **EC**: 1920 mg/m³, 1000 ppm
- **EC-STEL**: - mg/m³, - ppm

**ISOBUTANE:**

- **TRGS 900**: 2400 mg/m³, 1000 ppm
- **MAK**: 2400 mg/m³, 1000 ppm
- **GWBB-8 h**: - mg/m³, 1000 ppm
- **GWK-15 min.**: - mg/m³, 1000 ppm

**PROPANE:**

- **TLV-TWA**: - mg/m³, 1000 ppm
- **TLV-STEL**: - mg/m³, 1000 ppm
- **TRGS 900**: 1800 mg/m³, 1000 ppm
- **MAK**: 1800 mg/m³, 1000 ppm
- **GWBB-8 h**: - mg/m³, 1000 ppm
- **GWK-15 min.**: - mg/m³, 1000 ppm
8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Use only in well ventilated area

8.2.2 Environmental exposure controls: see heading 13

8.3 Personal protection:

8.3.1 Respiratory protection:
- In case of insufficient ventilation: respiratory protection with filter type A

8.3.2 Hand protection:
- Chemically resistant gloves

8.3.3 Eye protection:
- Safety glasses

8.3.4 Skin protection:
- Suitable protective clothing

9. Physical and chemical properties

9.1 General information:
Appearance (at 20°C) : Aerosol
Odour : Characteristic
Colour : Variable in colour

9.2 Important health, safety and environmental information:

- pH value : N.D.
- Boiling point/boiling range : N.D. °C
- Flashpoint : Contains extremely flammable components
- Explosion limits : N.D. Vol%
- Vapour pressure (at 20°C) : N.D. hPa
- Vapour pressure (at 50°C) : N.D. hPa
- Relative density (at 20°C) : N.D.
- Water solubility : Insoluble
- Soluble in : Organic solvents
- Relative vapour density : N.D.
- Viscosity (at 20°C) : N.D. Pa.s
- Partition coefficient n-octanol/water : N.D.
- Evaporation rate ratio to butyl acetate : N.D.
- ratio to ether : N.D.

9.3 Other information:

- Melting point/melting range : N.D. °C
- Auto-ignition point : N.D. °C
- Saturation concentration : N.D. g/m³

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:
- Unstable on exposure to heat

10.2 Materials to avoid:
- Keep away from: heat sources, ignition sources, acids, bases

10.3 Hazardous decomposition products:
- On burning: release of toxic and corrosive gases/vapours: phosphorus oxides, hydrogen chloride, carbon monoxide and carbon dioxide
- On heating: release of toxic/combustible gases/vapours (hydrogen cyanide)
- May polymerize on exposure to temperature rise
- May polymerize with a lot of compounds o.a.: (strong) bases and amines
- Reacts violently with (some) acids/bases
11. Toxicological information

11.1 Acute toxicity:

POLYMETHYLENEPOLYPHENYLISOCYANATE:

<table>
<thead>
<tr>
<th></th>
<th>oral rat</th>
<th>dermal rabbit</th>
<th>dermal rabbit</th>
<th>inhalation rat</th>
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<tbody>
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<td>&gt; 10000</td>
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<td></td>
<td></td>
<td>mg/1/4 h</td>
</tr>
<tr>
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<td>mg/1/4 h</td>
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</tr>
<tr>
<td>LC50</td>
<td></td>
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<td></td>
<td>ppm/4 h</td>
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PROPANE:

<table>
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<th>oral rat</th>
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<th>dermal rabbit</th>
<th>inhalation rat</th>
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</thead>
<tbody>
<tr>
<td>LD50</td>
<td>N.D.</td>
<td>N.D.</td>
<td>N.D.</td>
<td>N.D.</td>
</tr>
<tr>
<td>LD50</td>
<td></td>
<td></td>
<td></td>
<td>mg/1/4 h</td>
</tr>
<tr>
<td>LD50</td>
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<td>mg/1/4 h</td>
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<tr>
<td>LC50</td>
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ISOBUTANE:

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</tr>
<tr>
<td>LD50</td>
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<td></td>
<td></td>
<td>mg/1/4 h</td>
</tr>
<tr>
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<tr>
<td>LC50</td>
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<td>ppm/4 h</td>
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</table>

11.2 Chronic toxicity:

POLYMETHYLENEPOLYPHENYLISOCYANATE:

<p>| | | | | |</p>
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<tr>
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<tbody>
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<td>EC repr.</td>
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<td>not listed</td>
<td></td>
</tr>
</tbody>
</table>

Carcinogenicity (TLV) : not listed
Carcinogenicity (MAC) : not listed
Carcinogenicity (VME) : not listed
Carcinogenicity (GWBB) : not listed
Carcinogenicity (MAK) : category 3B
Mutagenicity (MAK) : not listed
Teratogenicity (MAK) : Group -
IARC classification : 3

DIMETHYL ETHER:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>EC car.</td>
<td>not listed</td>
<td>not listed</td>
<td>not listed</td>
<td></td>
</tr>
<tr>
<td>EC muta.</td>
<td>not listed</td>
<td>not listed</td>
<td>not listed</td>
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<tr>
<td>EC repr.</td>
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<td>not listed</td>
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</tbody>
</table>

Carcinogenicity (TLV) : not listed
Carcinogenicity (MAC) : not listed
Carcinogenicity (VME) : not listed
Carcinogenicity (GWBB) : not listed
Carcinogenicity (MAK) : not listed
Mutagenicity (MAK) : not listed
Teratogenicity (MAK) : Group D
IARC classification : not listed
11.3 Routes of exposure: inhalation, eyes and skin

11.4 Acute effects/symptoms (upon overexposure):

**AFTER INHALATION:**
- Dry/sore throat
- Coughing
- Irritation of the respiratory tract
- Irritation of the nasal mucous membranes
- Runny nose

**FOLLOWING SYMPTOMS MAY APPEAR LATER:**
- Inflammation of the respiratory tract
- Risk of lung oedema
- Respiratory difficulties

**AFTER SKIN CONTACT:**
- Tingling/irritation of the skin

**AFTER EYE CONTACT:**
- Irritation of the eye tissue
- Lacrimation

11.5 Chronic effects:
- May cause sensitization by skin contact
- May cause sensitization by inhalation
- Contains substance with uncertain carcinogenic properties (polymethylenepolyphenylisocyanate)

**ON CONTINUOUS EXPOSURE/CONTACT:**
- Body temperature rise
- Tremor
- Feeling of weakness
- Headache
- Skin rash/inflammation
- May stain the skin
- Dry skin
- Risk of pneumonia
12. Ecological information

12.1 Ecotoxicity:
- No data available

12.2 Mobility:
- Volatile organic compounds (VOC): 20 %
- Insoluble in water

For other physicochemical properties see section 9

12.3 Persistence and degradability:
- Biodegradation $\text{BOD}_5$ : N.D. % $\text{ThOD}$
- water : No data available
- soil : $T \frac{1}{2}$ N.D. days

12.4 Bioaccumulative potential:
- $\log P_{ow}$ : N.D.
- BCF : N.D.

12.5 Other adverse effects:
- WGK : -
  (classification in compliance with
  Verwaltungsvorschrift wassergefährdender Stoffe (VvVwS)
  of 17 May 1999)
- Effect on the ozone layer : Not dangerous for the ozone layer (1999/45/EC)
- Greenhouse effect : No data available
- Effect on waste water purification : No data available

13. Disposal considerations

13.1 Provisions relating to waste:
- Hazardous waste (91/689/EEC)

13.2 Disposal methods:
- Specific treatment
- Do not discharge into drains or the environment

13.3 Packaging:
14. Transport information

14.1 Classification of the substance in compliance with UN Recommendations

<table>
<thead>
<tr>
<th>UN number</th>
<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
<th>PROPER SHIPPING NAME</th>
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</thead>
<tbody>
<tr>
<td>1950</td>
<td>2.1</td>
<td>-</td>
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<td>UN 1950, Aerosols</td>
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</tbody>
</table>

14.2 ADR (transport by road)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>CLASSIFICATION CODE</th>
<th>DANGER LABEL TANKS</th>
<th>DANGER LABEL PACKAGES</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>5 F</td>
<td>-</td>
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</table>

14.3 RID (transport by rail)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>CLASSIFICATION CODE</th>
<th>DANGER LABEL TANKS</th>
<th>DANGER LABELPACKAGES</th>
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<tr>
<td>2</td>
<td>5 F</td>
<td>-</td>
<td>2.1</td>
</tr>
</tbody>
</table>

14.4 ADNR (transport by inland waterways)

<table>
<thead>
<tr>
<th>CLASS</th>
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<th>DANGER LABEL TANKS</th>
<th>DANGER LABEL PACKAGES</th>
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<tbody>
<tr>
<td>2</td>
<td>5 F</td>
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</table>

14.5 IMDG (maritime transport)

<table>
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<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
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<th>EMS</th>
<th>Marine pollutant</th>
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<td>F-D, S-U</td>
<td>-</td>
</tr>
</tbody>
</table>

14.6 ICAO (air transport)

<table>
<thead>
<tr>
<th>CLASS</th>
<th>SUB RISKS</th>
<th>PACKING</th>
<th>PACKING INSTRUCTIONS PASSENGER AIRCRAFT</th>
<th>PACKING INSTRUCTIONS CARGO AIRCRAFT</th>
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<td>2.1</td>
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<td>-</td>
<td>203/Y203</td>
<td>203</td>
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</tbody>
</table>

14.7 Special precautions in connection with transport

| : | None |

14.8 Limited quantities (LQ)

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, only the following prescriptions shall be complied with:
- Each package shall display a diamond-shaped figure with the following inscription: 'UN 1950', or, in the case of different goods with different identification numbers within a single package:
- the letters 'LQ'
SoudaFoam D&W (Gun)

15. Regulatory information

Labelling in accordance with directives 67/548/EEC and 1999/45/EC

Contains: polymethylene polyphenylisocyanate

R20: Harmful by inhalation
R36/37/38: Irritating to eyes, respiratory system and skin
R42/43: May cause sensitization by inhalation and skin contact

S23: Do not breathe spray
S36/37/39: Wear suitable protective clothing gloves, and eye/face protection
S38: In case of insufficient ventilation, wear respiratory equipment
S45: In case of accident or if you feel unwell, seek medical advice (show the label where possible)

Keep away from sources of ignition - No smoking.
Keep out of the reach of children.
Pressurized container. Protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not pierce or burn after use.
Do not spray on a naked flame or any incandescent material

Contains isocyanates. See information supplied by the manufacturer.
16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
* = INTERNAL CLASSIFICATION

Exposure limits:
TLV : Threshold Limit Value - ACGIH US 2002
OES : Occupational Exposure Standards - United Kingdom 1999
MEL : Maximum Exposure Limits - United Kingdom 1999
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001
TRK : Technische Richtkonzentrationen - Germany 2001
MAC : Maximale aanvaarde concentratie - the Netherlands 2002
VME : Valeurs limites de Moyenne d’Exposition - France 1999
VLE : Valeurs limites d’Exposition à court terme - France 1999
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium 2002
GWK : Grenswaarde kortstondige blootstelling - Belgium 2002
EC : Indicative occupational exposure limit values - directive 2000/39/EC

I : Inhalable fraction = T : Total dust = E : Einatembarer Aerosolanteil
R : Respirable fraction = A : Alveolengängiger Aerosolanteil/Alveolar dust
C : Ceiling limit

a: aerosol r: rook/Rauch (fume)
d: damp (vapour) st: stof/Staub (dust)
du: dust ve: vezel (fibre)
fa: Faser (fibre) va: vapour
fi: fibre om: oil mist
fu: fume on: ollenevel/Ölnebel (oil mist)
p: poussière (dust) part: particles

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands 2002

Full text of any R-phrases referred to under headings 2 and 3:

R12 : Extremely flammable
R20 : Harmful by inhalation
R36/37/38 : Irritating to eyes, respiratory system and skin
R42/43 : May cause sensitization by inhalation and skin contact