

SAFETY DATA SHEET

Based on Directive 2001/58/EC of the Commission of the European Communities

SOUDAFOAM FR

1. Identification of the substance/preparation and the company

1.1 Identification of the substance or preparation:

Not applicable

1.2 Use of the substance or the preparation:

Polyurethane

1.3 Company/undertaking identification:

SOUDAL N.V.
Everdongenlaan 18-20
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Tel. : +32 14 42 42 31
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1.4 Telephone number for emergency:

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Brandweerinformatiecentrum voor gevaarlijke stoffen (B.I.G.)
Technische Schoolstraat 43 A, B-2440 Geel

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS/ELINCS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
tris(2-chloro-1-methylethyl) phosphate	13674-84-5 237-158-7	< 25	-	52/53 (1)
polymethylene polyphenyl isocyanate	9016-87-9 -	30 - 60	Xn	20-36/37/38-42/43 (1)
halogenated polyetherpolyol	86675-46-9 -	1 - 10	Xn	22 (1)
norflurane	811-97-2 212-377-0	1 - 10	-	-
dimethyl ether	115-10-6 204-065-8	1 - 10	F+	12 (1)
isobutane	75-28-5 200-857-2	1 - 10	F+	12 (1)

(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

Printing date : 10-2004
Compiled by : Brandweerinformatiecentrum voor Gevaarlijke Stoffen vzw (BIG)
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MSDS established : 15-07-2004
Reference number : BIG\40671GB
Reason for revision : See 2 -15

Revision date : 12-10-2004
Revision number : 001

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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:**
- Gas/vapour spreads at floor level: ignition hazard
 - Gas/vapour flammable with air within explosion limits
 - On heating: release of toxic/combustible gases/vapours: hydrogen cyanide
 - Aerosol may explode under the effect of heat
- 5.4 Instructions:**
- Cool closed containers with water if they are exposed to the fire
 - Dilute toxic gases with water spray
 - Do not move the load if exposed to heat
- 5.5 Special protective equipment for firefighters:**
- Heat/fire exposure: compressed air/oxygen apparatus
 - Protective clothing for exposure to chemicals

6. Accidental release measures

- 6.1 Personal protection/precautions:**
See heading 8.2/8.3/13
- 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

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7. Handling and storage

7.1 Handling:

- Observe very strict hygiene - avoid contact
- Use spark-/explosionproof appliances and lighting system
- 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
 - Ventilation at floor level
- Keep away from: heat sources, ignition sources, acids, bases

Storage temperature	:	< 50	°C
Quantity limits	:	N.D.	kg
Storage life	:	365	days
Materials for packaging	:		
- suitable	:	aerosol dispenser	

7.3 Specific uses:

- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

POLYMETHYLENE POLYPHENYL ISOCYANATE:

TLV-TWA	:		mg/m ³	ppm
TLV-STEL	:		mg/m ³	ppm
TLV-Ceiling	:		mg/m ³	ppm
MEL-LTEL	:	0.02 (-NCO)	mg/m ³	- ppm
MEL-STEL	:	0.07 (-NCO)	mg/m ³	- ppm

NORFLURANE:

OES-LTEL	:	4240	mg/m ³	1000 ppm
OES-STEL	:	-	mg/m ³	- ppm
MAK	:	4200	mg/m ³	1000 ppm
TRK	:		mg/m ³	ppm
MAC-TGG 8 h	:	4200	mg/m ³	
MAC-TGG 15 min.	:		mg/m ³	
MAC-Ceiling	:		mg/m ³	

DIMETHYL ETHER:

OES-LTEL	:	766	mg/m ³	400 ppm
OES-STEL	:	958	mg/m ³	500 ppm
MAK	:	1900	mg/m ³	1000 ppm
TRK	:		mg/m ³	ppm
MAC-TGG 8 h	:	950	mg/m ³	
MAC-TGG 15 min.	:	1500	mg/m ³	
MAC-Ceiling	:		mg/m ³	
GWBB-8 h	:	1920	mg/m ³	1000 ppm
GWK-15 min.	:	-	mg/m ³	- ppm
Momentary value	:		mg/m ³	ppm
EC	:	1920	mg/m ³	1000 ppm
EC-STEL	:	-	mg/m ³	- ppm

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PROPANE :

MAK	:	1800	mg/m³	1000	ppm
TRK	:		mg/m³		ppm

ISOBUTANE :

MAK	:	2400	mg/m³	1000	ppm
TRK	:		mg/m³		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 filtertype 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 a (highly) flammable component
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	:	> 1
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/m ³

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 heating: release of toxic/combustible gases/vapours: hydrogen cyanide
- May polymerize on exposure to temperature rise
- On burning: release of toxic and corrosive gases/vapours: phosphorus oxides, nitrous vapours, hydrogen chloride, hydrofluoric acid, carbon monoxide, carbon dioxide and formation of small quantities of hydrobromic acid
- Polymerizes with many compounds e.g.: (strong) bases and amines
- Reacts violently with (some) acids/bases

11. Toxicological information

11.1 Acute toxicity:

TRIS(2-CHLORO-1-METHYLETHYL) PHOSPHATE:

LD50 oral rat	: 3600	mg/kg
LD50 dermal rabbit	: > 2000	mg/kg
LD50 dermal rabbit	: > 2000	mg/kg
LC50 inhalation rat	: > 5	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

POLYMETHYLENE POLYPHENYL ISOCYANATE:

LD50 oral rat	: > 10000	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: > 5000	mg/kg
LC50 inhalation rat	: N.D.	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

NORFLURANE:

LD50 oral rat	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: > 2000	mg/l/4 h
LC50 inhalation rat	: > 500000	ppm/4 h

DIMETHYL ETHER:

LD50 oral rat	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: 309	mg/l/4 h
LC50 inhalation rat	: 163991	ppm/4 h

PROPANE:

LD50 oral rat	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: 513	mg/l/4 h
LC50 inhalation rat	: 280000	ppm/4 h

ISOBUTANE:

LD50 oral rat	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LD50 dermal rabbit	: N.D.	mg/kg
LC50 inhalation rat	: > 50	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

11.2 Chronic toxicity:

NORFLURANE:

Teratogenicity (MAK) : Group C

DIMETHYL ETHER:

Teratogenicity (MAK) : Group D

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 of group C (MAK-Schwangerschaftsgruppe) (norflurane)
- Not listed in mutagenicity class (EC,MAK)

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:

TRIS(2-CHLORO-1-METHYLETHYL) PHOSPHATE:

- LC50 (96 h) : 56.2 mg/l (BRACHYDANIO RERIO)
- EC50 (48 h) : 65/335 mg/l (DAPHNIA MAGNA)
- EC50 (96 h) : 57/97 mg/l (SELENASTRUM CAPRICORNUTUM)

12.2 Mobility:

- Volatile organic compounds (VOC): > 12.9%
- Insoluble in water

For other physicochemical properties see section 9

12.3 Persistence and degradability:

- Biodegradation BOD₅ : N.D. % ThOD
- Water : No data available
- Soil : T ½ N.D. days

12.4 Bioaccumulative potential:

- log P_{ow} : N.D.
- BCF : N.D.

12.5 Other adverse effects:

- WGK : 2 (classification based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) 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:

- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 08 05 01* (waste isocyanates)
- Waste material code (Flanders): 015; 651
- Hazardous waste (91/689/EEC)

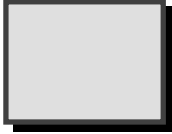
13.2 Disposal methods:

- Specific treatment
- Do not discharge into drains or the environment

13.3 Packaging:

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10* (packaging containing residues of or contaminated by dangerous substances)

14. Transport information



14.1 Classification of the substance in compliance with UN Recommendations
 UN number : 1950
 CLASS : 2.2
 SUB RISKS : -
 PACKING : -
 PROPER SHIPPING NAME :
 UN 1950, Aerosols

14.2 ADR (transport by road)
 CLASS : 2
 PACKING :
 CLASSIFICATION CODE : 5 A
 DANGER LABEL TANKS : -
 DANGER LABEL PACKAGES : 2.2

14.3 RID (transport by rail)
 CLASS : 2
 PACKING :
 CLASSIFICATION CODE : 5 A
 DANGER LABEL TANKS : -
 DANGER LABEL PACKAGES : 2.2

14.4 ADNR (transport by inland waterways)
 CLASS : 2
 PACKING :
 CLASSIFICATION CODE : 5A
 DANGER LABEL TANKS : -
 DANGER LABEL PACKAGES : 2.2

14.5 IMDG (maritime transport)
 CLASS : 2.2
 SUB RISKS : -
 PACKING : -
 MFAG : -
 EMS : F-D, S-U
 MARINE POLLUTANT : -

14.6 ICAO (air transport)
 CLASS : 2.2
 SUB RISKS : -
 PACKING : -
 PACKING INSTRUCTIONS PASSENGER AIRCRAFT : 203/Y203
 PACKING INSTRUCTIONS CARGO AIRCRAFT : 203

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'

15. Regulatory information

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



Extremely flammable



Harmful

Contains : polymethylene polyphenyl isocyanate

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)

Contains isocyanates. See information supplied by the manufacturer.

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

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 (NFPA)

Exposure limits:

TLV : Threshold Limit Value - ACGIH USA 2004
OES : Occupational Exposure Standards - United Kingdom 2003
MEL : Maximum Exposure Limits - United Kingdom 2003
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2002
TRK : Technische Richtkonzentrationen - Germany 2002
MAC : Maximale aanvaarde concentratie - The Netherlands 2004
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: olienevel/Ölnebel	(oil mist)
p: poussière	(dust)	part: particles	

Chronic toxicity:

K: List of the carcinogenic substances and processes - The Netherlands 2004

Full text of any R-phrases referred to under heading 2:

R12 : Extremely flammable
R20 : Harmful by inhalation
R22 : Harmful if swallowed
R36 : Irritant to the eyes
R36/37/38 : Irritating to eyes, respiratory system and skin
R42/43 : May cause sensitization by inhalation and skin contact
R52/53 : Harmful to aquatic organisms; may cause long-term adverse effects in the aquatic environment