

**RTV PU-vaaho****1. Identification of the substance/preparation and of the company/undertaking****1.1 Identification of the substance or preparation:**

- Not applicable

**1.2 Use of the substance or the preparation:**

Polyurethane foam

**1.3 Company/undertaking identification:**

SOUDAL N.V.  
Everdongenlaan 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**

Hazardous ingredients	CAS No. EINECS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
polymethylenepolyphenylisocyanate	9016-87-9 -	> 25	Xn	20-36/37/38-42/43 (1)
dimethyl ether	115-10-6 204-065-8	1 - 15	F+	12 (1)
propane	74-98-6 200-827-9	1 - 5	F+	12 (1)
isobutane	75-28-5 200-857-2	1 - 5	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

## 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: 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 8.1/8.3/10.3
- 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
- Keep away from: heat sources, ignition sources, acids, bases

Storage temperature	: < 50	°C
Quantity limit	: 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:

POLYMETHYLENEDIPHENYLISOCYANATE:

TLV-TWA	: -	mg/m <sup>3</sup>	-	ppm
TLV-STEL	: -	mg/m <sup>3</sup>	-	ppm
TLV-Ceiling	: -	mg/m <sup>3</sup>	-	ppm
MEL-LTEL	: 0.02 (-NCO)	mg/m <sup>3</sup>	-	ppm
MEL-STEL	: 0.07 (-NCO)	mg/m <sup>3</sup>	-	ppm
MAK	: -	mg/m <sup>3</sup>	-	ppm
TRK	: -	mg/m <sup>3</sup>	-	ppm
MAC-TGG 8 h	: -	mg/m <sup>3</sup>	-	
MAC-TGG 15 min.	: -	mg/m <sup>3</sup>	-	
MAC-Ceiling	: -	mg/m <sup>3</sup>	-	
VME-8 h	: -	mg/m <sup>3</sup>	-	ppm
VLE-15 min.	: -	mg/m <sup>3</sup>	-	ppm
GWBB-8 h	: -	mg/m <sup>3</sup>	-	ppm
GWK-15 min.	: -	mg/m <sup>3</sup>	-	ppm
Momentary value	: -	mg/m <sup>3</sup>	-	ppm
EC	: -	mg/m <sup>3</sup>	-	ppm
EC-STEL	: -	mg/m <sup>3</sup>	-	ppm

# RTV PU-vahto

## DIMETHYL ETHER:

TLV-TWA	: -	mg/m <sup>3</sup>	-	ppm
TLV-STEL	: -	mg/m <sup>3</sup>	-	ppm
TLV-Ceiling	: -	mg/m <sup>3</sup>	-	ppm
OES-LTEL	: -	mg/m <sup>3</sup>	400	ppm
OES-STEL	: -	mg/m <sup>3</sup>	500	ppm
MAK	: 1900	mg/m <sup>3</sup>	1000	ppm
TRK	: -	mg/m <sup>3</sup>	-	ppm
MAC-TGG 8 h	: 950	mg/m <sup>3</sup>		
MAC-TGG 15 min.	: 1500	mg/m <sup>3</sup>		
MAC-Ceiling	: -	mg/m <sup>3</sup>		
VME-8 h	: -	mg/m <sup>3</sup>	-	ppm
VLE-15 min.	: -	mg/m <sup>3</sup>	-	ppm
GWBB-8 h	: -	mg/m <sup>3</sup>	-	ppm
GWK-15 min.	: -	mg/m <sup>3</sup>	-	ppm
Momentary value	: -	mg/m <sup>3</sup>	-	ppm
EC	: 1920	mg/m <sup>3</sup>	1000	ppm
EC-STEL	: -	mg/m <sup>3</sup>	-	ppm

## PROPANE:

TLV-TWA	: -	mg/m <sup>3</sup>	2500	ppm
TLV-STEL	: -	mg/m <sup>3</sup>	-	ppm
TLV-Ceiling	: -	mg/m <sup>3</sup>	-	ppm
OES-LTEL	: -	mg/m <sup>3</sup>	-	ppm
OES-STEL	: -	mg/m <sup>3</sup>	-	ppm
MAK	: 1800	mg/m <sup>3</sup>	1000	ppm
TRK	: -	mg/m <sup>3</sup>	-	ppm
MAC-TGG 8 h	: -	mg/m <sup>3</sup>		
MAC-TGG 15 min.	: -	mg/m <sup>3</sup>		
MAC-Ceiling	: -	mg/m <sup>3</sup>		
VME-8 h	: -	mg/m <sup>3</sup>	-	ppm
VLE-15 min.	: -	mg/m <sup>3</sup>	-	ppm
GWBB-8 h	: -	mg/m <sup>3</sup>	-	ppm
GWK-15 min.	: -	mg/m <sup>3</sup>	-	ppm
Momentary value	: -	mg/m <sup>3</sup>	-	ppm
EC	: -	mg/m <sup>3</sup>	-	ppm
EC-STEL	: -	mg/m <sup>3</sup>	-	ppm

## ISOBUTANE:

TLV-TWA	: -	mg/m <sup>3</sup>	-	ppm
TLV-STEL	: -	mg/m <sup>3</sup>	-	ppm
TLV-Ceiling	: -	mg/m <sup>3</sup>	-	ppm
OES-LTEL	: -	mg/m <sup>3</sup>	-	ppm
OES-STEL	: -	mg/m <sup>3</sup>	-	ppm
MAK	: 2400	mg/m <sup>3</sup>	1000	ppm
TRK	: -	mg/m <sup>3</sup>	-	ppm
MAC-TGG 8 h	: -	mg/m <sup>3</sup>		
MAC-TGG 15 min.	: -	mg/m <sup>3</sup>		
MAC-Ceiling	: -	mg/m <sup>3</sup>		
VME-8 h	: -	mg/m <sup>3</sup>	-	ppm
VLE-15 min.	: -	mg/m <sup>3</sup>	-	ppm
GWBB-8 h	: -	mg/m <sup>3</sup>	-	ppm
GWK-15 min.	: -	mg/m <sup>3</sup>	-	ppm
Momentary value	: -	mg/m <sup>3</sup>	-	ppm
EC	: -	mg/m <sup>3</sup>	-	ppm
EC-STEL	: -	mg/m <sup>3</sup>	-	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/m <sup>3</sup>

## 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: 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:

## POLYMETHYLENEDIPOLYPHENYLISOCYANATE:

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

## 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	: 658	mg/l/4 h
LC50 inhalation rat	: N.D.	ppm/4 h

## 11.2 Chronic toxicity:

## POLYMETHYLENEDIPOLYPHENYLISOCYANATE:

EC carc. cat.	: not listed
EC muta. cat.	: not listed
EC repr. cat.	: not listed
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:

EC carc. cat.	: not listed
EC muta. cat.	: not listed
EC repr. cat.	: not listed
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 BOD<sub>5</sub> : N.D. % ThOD
- water : No data available
- soil : T ½ N.D. days

12.4 Bioaccumulative potential:

- log P<sub>ow</sub> : N.D.
- BCF : N.D.

12.5 Other adverse effects:

- WGK : - (classification 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)
- Hazardous waste (91/689/EEC)

13.2 Disposal methods:

- Specific treatment

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 : 2.1
  - SUB RISKS : -
  - PACKING : -
  - PROPER SHIPPING NAME : UN 1950, Aerosols
- 14.2 ADR (transport by road)
  - CLASS : 2
  - CLASSIFICATION CODE : 5 F
  - DANGER LABEL TANKS : -
  - DANGER LABEL PACKAGES : 2.1
- 14.3 RID (transport by rail)
  - CLASS : 2
  - CLASSIFICATION CODE : 5 F
  - DANGER LABEL TANKS : -
  - DANGER LABEL PACKAGES : 2.1
- 14.4 ADNR (transport by inland waterways)
  - CLASS : 2
  - CLASSIFICATION CODE : 5 F
  - DANGER LABEL TANKS : -
  - DANGER LABEL PACKAGES : 2.1
- 14.5 IMDG (maritime transport)
  - CLASS : 2.1
  - SUB RISKS : -
  - PACKING : -
  - MFAG : -
  - EMS : F-D, S-U
  - Marine pollutant : -
- 14.6 ICAO (air transport)
  - CLASS : 2.1
  - 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 : polymethylenepolyphenylisocyanate

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

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

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

## 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

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

## Chronic toxicity:

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