

# SAFETY DATA SHEET

Based upon Regulation (EC) No 1907/2006, as amended by Regulation (EU) No 2015/830

## SAFETY SEAL PLUS

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

**Product name** : SAFETY SEAL PLUS  
**Registration number REACH** : Not applicable (mixture)  
**Product type REACH** : Mixture

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### 1.2.1 Relevant identified uses

Adhesive  
Sealing compound

##### 1.2.2 Uses advised against

No uses advised against known

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier of the safety data sheet

Novatio\*  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 25 76 40  
☎ +32 14 22 02 66  
info@novatio.be  
\*NOVATIO is a registered trademark of Novatech International N.V.

##### Manufacturer of the product

Novatech International N.V.  
Industrielaan 5B  
B-2250 Olen  
☎ +32 14 85 97 37  
☎ +32 14 85 97 38  
info@tec7.be

#### 1.4. Emergency telephone number

24h/24h (Telephone advice: English, French, German, Dutch) :  
+32 14 58 45 45 (BIG)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Flam. Liq.	category 2	H225: Highly flammable liquid and vapour.
Repr.	category 2	H361d: Suspected of damaging the unborn child if inhaled.
Asp. Tox.	category 1	H304: May be fatal if swallowed and enters airways.
STOT RE	category 2	H373: May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
Skin Irrit.	category 2	H315: Causes skin irritation.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
STOT SE	category 3	H336: May cause drowsiness or dizziness.
Aquatic Acute	category 1	H400: Very toxic to aquatic life.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

#### 2.2. Label elements



Contains: heptane; toluene.

**Signal word** Danger

##### H-statements

H225 Highly flammable liquid and vapour.  
H361d Suspected of damaging the unborn child if inhaled.  
H304 May be fatal if swallowed and enters airways.

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H373 May cause damage to organs through prolonged or repeated exposure if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H336 May cause drowsiness or dizziness.  
H410 Very toxic to aquatic life with long lasting effects.

## P-statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 Wear protective gloves, protective clothing and eye protection/face protection.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P308 + P313 IF exposed or concerned: Get medical advice/attention.

## 2.3. Other hazards

Gas/vapour spreads at floor level: ignition hazard

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to CLP	Note	Remark
heptane 01-2119457603-38	142-82-5 205-563-8	C=28.4 %	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)(10)	Constituent
toluene 01-2119471310-51	108-88-3 203-625-9	C=23.3 %	Flam. Liq. 2; H225 Repr. 2; H361d Asp. Tox. 1; H304 STOT RE 2; H373 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H336 Aquatic Chronic 3; H412	(1)(2)(10)(6)	Constituent

(1) For H-statements in full: see heading 16

(2) Substance with a Community workplace exposure limit

(6) Enumerated in Annex VI of Regulation (EC) No. 1272/2008 but the classification has been adapted after evaluation of available test data

(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

#### After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

#### After skin contact:

Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents without medical advice. Take victim to a doctor if irritation persists.

#### After eye contact:

Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.

#### After ingestion:

Rinse mouth with water. Do not induce vomiting. Do not apply (chemical) neutralizing agents without medical advice. Consult a doctor/medical service if you feel unwell.

### 4.2. Most important symptoms and effects, both acute and delayed

#### 4.2.1 Acute symptoms

##### After inhalation:

Dizziness. Drowsiness.

##### After skin contact:

Tingling/irritation of the skin.

##### After eye contact:

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Irritation of the eye tissue.

**After ingestion:**

Risk of aspiration pneumonia. Symptoms similar to those listed under inhalation.

**4.2.2 Delayed symptoms**

No effects known.

**4.3. Indication of any immediate medical attention and special treatment needed**

If applicable and available it will be listed below.

## SECTION 5: Firefighting measures

**5.1. Extinguishing media**

**5.1.1 Suitable extinguishing media:**

Small fire: Quick-acting ABC powder extinguisher, Quick-acting BC powder extinguisher, Quick-acting class B foam extinguisher, Quick-acting CO2 extinguisher.

Major fire: Class B foam (not alcohol-resistant).

**5.1.2 Unsuitable extinguishing media:**

Small fire: Water (quick-acting extinguisher, reel); risk of puddle expansion.

Major fire: Water; risk of puddle expansion.

**5.2. Special hazards arising from the substance or mixture**

On burning: release of harmful gases/vapours e.g.: carbon monoxide - carbon dioxide.

**5.3. Advice for firefighters**

**5.3.1 Instructions:**

If exposed to fire cool the closed containers by spraying with water. Do not move the load if exposed to heat. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

**5.3.2 Special protective equipment for fire-fighters:**

Gloves. Protective goggles. Head/neck protection. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment.

**6.1.1 Protective equipment for non-emergency personnel**

See heading 8.2

**6.1.2 Protective equipment for emergency responders**

Gloves. Protective goggles. Head/neck protection. Protective clothing.

Suitable protective clothing

See heading 8.2

**6.2. Environmental precautions**

Contain released product. Dam up the liquid spill. Try to reduce evaporation. Prevent soil and water pollution. Prevent spreading in sewers.

**6.3. Methods and material for containment and cleaning up**

Take up liquid spill into absorbent material. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

**6.4. Reference to other sections**

See heading 13.

## SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

**7.1. Precautions for safe handling**

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Gas/vapour heavier than air at 20°C. Observe strict hygiene. Remove contaminated clothing immediately. Keep container tightly closed. Do not discharge the waste into the drain.

**7.2. Conditions for safe storage, including any incompatibilities**

**7.2.1 Safe storage requirements:**

Storage temperature: 5 °C - 30 °C. Store in a dry area. Keep container in a well-ventilated place. Fireproof storeroom. Keep locked up. Unauthorized persons are not admitted. Meet the legal requirements.

**7.2.2 Keep away from:**

Heat sources, ignition sources, oxidizing agents, water/moisture.

**7.2.3 Suitable packaging material:**

No data available

**7.2.4 Non suitable packaging material:**

No data available

**7.3. Specific end use(s)**

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.

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## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1 Occupational exposure

##### a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

#### EU

n-Heptane	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	500 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	2085 mg/m <sup>3</sup>
Toluene	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	50 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	192 mg/m <sup>3</sup>
	Short time value (Indicative occupational exposure limit value)	100 ppm
	Short time value (Indicative occupational exposure limit value)	384 mg/m <sup>3</sup>

#### Belgium

n-Heptane	Time-weighted average exposure limit 8 h	400 ppm
	Time-weighted average exposure limit 8 h	1664 mg/m <sup>3</sup>
	Short time value	500 ppm
	Short time value	2085 mg/m <sup>3</sup>
Toluène	Time-weighted average exposure limit 8 h	20 ppm
	Time-weighted average exposure limit 8 h	77 mg/m <sup>3</sup>
	Short time value	100 ppm
	Short time value	384 mg/m <sup>3</sup>

#### The Netherlands

n-Heptaan	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	288 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	1200 mg/m <sup>3</sup>
	Short time value (Public occupational exposure limit value)	384 ppm
	Short time value (Public occupational exposure limit value)	1600 mg/m <sup>3</sup>
Toluëen	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	39 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	150 mg/m <sup>3</sup>
	Short time value (Public occupational exposure limit value)	100 ppm
	Short time value (Public occupational exposure limit value)	384 mg/m <sup>3</sup>

#### France

n-Heptane	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	400 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	1668 mg/m <sup>3</sup>
	Short time value (VRC: Valeur réglementaire contraignante)	500 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	2085 mg/m <sup>3</sup>
Toluène	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	20 ppm
	Time-weighted average exposure limit 8 h (VRC: Valeur réglementaire contraignante)	76.8 mg/m <sup>3</sup>
	Short time value (VRC: Valeur réglementaire contraignante)	100 ppm
	Short time value (VRC: Valeur réglementaire contraignante)	384 mg/m <sup>3</sup>

#### Germany

Heptan (alle Isomeren)	Time-weighted average exposure limit 8 h (TRGS 900)	500 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	2100 mg/m <sup>3</sup>
Toluol	Time-weighted average exposure limit 8 h (TRGS 900)	50 ppm
	Time-weighted average exposure limit 8 h (TRGS 900)	190 mg/m <sup>3</sup>

#### UK

n-Heptane	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	500 ppm
	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	2085 mg/m <sup>3</sup>
Toluene	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	50 ppm

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Toluene	Time-weighted average exposure limit 8 h (Workplace exposure limit (EH40/2005))	191 mg/m <sup>3</sup>
	Short time value (Workplace exposure limit (EH40/2005))	100 ppm
	Short time value (Workplace exposure limit (EH40/2005))	384 mg/m <sup>3</sup>

## USA (TLV-ACGIH)

Heptane, all isomers	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	400 ppm
	Short time value (TLV - Adopted Value)	500 ppm
Toluene	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	20 ppm

## b) National biological limit values

If limit values are applicable and available these will be listed below.

### Germany

Toluol (o-Kresol (nach Hydrolyse))	Urin: expositionsende, bzw. schichtende bei langzeitexposition: nach mehreren vorangegangenen schichten	1,5 mg/l	11/2018 DFG
Toluol (Toluol)	Urin: expositionsende, bzw. schichtende	75 µg/l	11/2018 DFG
Toluol (Toluol)	Vollblut: unmittelbar nach exposition	600 µg/l	11/2017 Ständige Senatskommission zur Prüfung gesundheitsschädlicher Arbeitsstoffe der DFG

## USA (BEI-ACGIH)

Toluene (o-Cresol)	Urine: end of shift	0,3 mg/g creatinine	
Toluene (Toluene)	Blood: prior to last shift of workweek	0,02 mg/L	
Toluene (Toluene)	urine: end of shift	0,03 mg/L	

## 8.1.2 Sampling methods

Product name	Test	Number
n-Heptane (Hydrocarbons, BP 26 to 126 C)	NIOSH	1500
n-Heptane (Volatile Organic compounds)	NIOSH	2549
n-Heptane	OSHA	7
Toluene (Hydrocarbons, aromatic)	NIOSH	1501
Toluene (organic and inorganic gases by Extractive FTIR)	NIOSH	3800
Toluene (Volatile Organic compounds)	NIOSH	2549
Toluene in blood	NIOSH	8007
Toluene	NIOSH	4000
Toluene	NIOSH	8002
Toluene	OSHA	1021
Toluene	OSHA	111

## 8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

## 8.1.4 Threshold values

### DNEL/DMEL - Workers

#### heptane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	2085 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	300 mg/kg bw/day	

#### toluene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	192 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	384 mg/m <sup>3</sup>	
	Long-term local effects inhalation	192 mg/m <sup>3</sup>	
	Acute local effects inhalation	384 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	384 mg/kg bw/day	

### DNEL/DMEL - General population

#### heptane

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	447 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	149 mg/kg bw/day	
	Long-term systemic effects oral	149 mg/kg bw/day	

#### toluene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	56.5 mg/m <sup>3</sup>	
	Acute systemic effects inhalation	226 mg/m <sup>3</sup>	
	Long-term local effects inhalation	56.5 mg/m <sup>3</sup>	
	Acute local effects inhalation	226 mg/m <sup>3</sup>	
	Long-term systemic effects dermal	226 mg/kg bw/day	
	Long-term systemic effects oral	8.13 mg/kg bw/day	

### PNEC

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toluene

Compartments	Value	Remark
Fresh water	0.68 mg/l	
Marine water	0.68 mg/l	
Aqua (intermittent releases)	0.68 mg/l	
STP	13.61 mg/l	
Fresh water sediment	16.39 mg/kg sediment dw	
Marine water sediment	16.39 mg/kg sediment dw	
Soil	2.89 mg/kg soil dw	

## 8.1.5 Control banding

If applicable and available it will be listed below.

## 8.2. Exposure controls

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer. The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

### 8.2.2 Individual protection measures, such as personal protective equipment

Observe strict hygiene. Do not eat, drink or smoke during work.

#### a) Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit.

#### b) Hand protection:

Protective gloves against chemicals (EN 374).

- materials (good resistance)

Butyl rubber, nitrile rubber, neoprene.

#### c) Eye protection:

Protective goggles.

#### d) Skin protection:

Protective clothing. Head/neck protection.

### 8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical form	Liquid
Odour	Oil-like odour
Odour threshold	No data available in the literature
Colour	No data available on colour
Particle size	Not applicable (liquid)
Explosion limits	No data available in the literature
Flammability	Highly flammable liquid and vapour.
Log Kow	Not applicable (mixture)
Dynamic viscosity	No data available in the literature
Kinematic viscosity	No data available in the literature
Melting point	No data available in the literature
Boiling point	97 °C
Evaporation rate	No data available in the literature
Relative vapour density	> 1
Vapour pressure	No data available in the literature
Solubility	No data available in the literature
Relative density	0.83
Decomposition temperature	No data available in the literature
Auto-ignition temperature	No data available in the literature
Flash point	-4 °C
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	No data available in the literature

### 9.2. Other information

Absolute density	830 kg/m <sup>3</sup>
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## SECTION 10: Stability and reactivity

### 10.1. Reactivity

May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No data available.

### 10.4. Conditions to avoid

#### Precautionary measures

Keep away from naked flames/heat. Insufficient ventilation: keep naked flames/sparks away. Insufficient ventilation: take precautions against electrostatic charges. Insufficient ventilation: use spark-/explosionproof appliances and lighting system.

### 10.5. Incompatible materials

Oxidizing agents, water/moisture.

### 10.6. Hazardous decomposition products

On burning: release of harmful gases/vapours e.g.: carbon monoxide - carbon dioxide.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### 11.1.1 Test results

#### Acute toxicity

##### SAFETY SEAL PLUS

No (test)data on the mixture available

Judgement is based on the relevant ingredients

##### heptane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	> 5000 mg/kg bw		Rat (male / female)	Read-across	
Dermal	LD50	Equivalent to OECD 402	> 2000 mg/kg bw	24 h	Rabbit (male / female)	Read-across	
Inhalation (vapours)	LC50	Equivalent to OECD 403	> 29.29 mg/l air	4 h	Rat (male / female)	Experimental value	

##### toluene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral (one dose)	LD50	Equivalent to OECD 401	5580 mg/kg bw		Rat (male)	Experimental value	
Dermal	LD50	Other	> 5000 mg/kg bw	24 h	Rabbit (male)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	25.7 mg/l air	4 h	Rat (male)	Experimental value	

#### Conclusion

Not classified for acute toxicity

#### Corrosion/irritation

##### SAFETY SEAL PLUS

No (test)data on the mixture available

Classification is based on the relevant ingredients

##### heptane

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Not irritating	Equivalent to OECD 405		24; 48; 72 hours	Rabbit	Read-across	Single treatment
Skin	Irritating	Equivalent to OECD 404	24 h	72 hours	Rabbit	Read-across	

##### toluene

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	Equivalent to OECD 405		1 hr; 1; 2; 3; 4; 7 days	Rabbit	Experimental value	Single treatment without rinsing
Skin	Irritating	EU Method B.4	4 h	24; 48; 72 hours	Rabbit	Experimental value	

Classification of this substance is debatable as it does not correspond to the conclusion from the test

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## Conclusion

Causes skin irritation.  
Causes serious eye irritation.  
Not classified as irritating to the respiratory system

## Respiratory or skin sensitisation

### SAFETY SEAL PLUS

No (test) data on the mixture available  
Judgement is based on the relevant ingredients  
heptane

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	Equivalent to OECD 406		24; 48 hours	Guinea pig (male / female)	Read-across	

### toluene

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Not sensitizing	EU Method B.6	72 h	24; 48 hours	Guinea pig (female)	Experimental value	

## Conclusion

Not classified as sensitizing for skin  
Not classified as sensitizing for inhalation

## Specific target organ toxicity

### SAFETY SEAL PLUS

No (test) data on the mixture available  
Classification is based on the relevant ingredients  
heptane

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (vapours)	NOAEC	Subchronic toxicity test	12470 mg/m <sup>3</sup> air	Central nervous system	No effect	16 weeks (daily)	Rat (male)	Experimental value
Inhalation			STOT SE cat.3		Drowsiness, dizziness			Literature study

### toluene

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral (stomach tube)	NOAEL	Equivalent to EU Method B.26	625 mg/kg bw/day		No effect	13 weeks (daily, 5 days / week)	Rat (male / female)	Experimental value
Dermal								Data waiving
Inhalation (vapours)	LOAEC local effects	Equivalent to OECD 453	2261 mg/m <sup>3</sup> air	Respiratory tract	Erosion/degeneration nasal epithelia	103 weeks (6h / day, 5 days / week)	Rat (male / female)	Calculated value
Inhalation	NOAEC	Human observation	50 ppm	Central nervous system	No effect	4.5 h	Human (male)	Experimental value

## Conclusion

May cause drowsiness or dizziness.  
May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.

## Mutagenicity (in vitro)

### SAFETY SEAL PLUS

No (test) data on the mixture available  
Judgement is based on the relevant ingredients  
heptane

Result	Method	Test substrate	Effect	Value determination	Remark
Negative with metabolic activation, negative without metabolic activation	Equivalent to OECD 471	Bacteria (S.typhimurium)	No effect	Experimental value	
Negative with metabolic activation, negative without metabolic activation	OECD 476	Human lymphocytes	No effect	Read-across	

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## toluene

Result	Method	Test substrate	Effect	Value determination	Remark
Negative	Equivalent to OECD 476	Mouse (lymphoma L5178Y cells)	No effect	Experimental value	

## Mutagenicity (in vivo)

### SAFETY SEAL PLUS

No (test)data on the mixture available

Judgement is based on the relevant ingredients

## toluene

Result	Method	Exposure time	Test substrate	Organ	Value determination
Negative	Other		Rat	Bone marrow	Experimental value

### Conclusion

Not classified for mutagenic or genotoxic toxicity

## Carcinogenicity

### SAFETY SEAL PLUS

No (test)data on the mixture available

Judgement is based on the relevant ingredients

## heptane

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Unknown								Data waiving

## toluene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Inhalation (vapours)	NOAEC	Equivalent to OECD 453	1200 ppm	103 weeks (6h / day, 5 days / week)	Rat (male / female)	No effect		Experimental value
Dermal	NOAEL	Carcinogenic toxicity study	0.05 ml (twice a week)		Mouse (male)	No effect		Experimental value

### Conclusion

Not classified for carcinogenicity

## Reproductive toxicity

### SAFETY SEAL PLUS

No (test)data on the mixture available

Classification is based on the relevant ingredients

## heptane

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity (Inhalation (vapours))	LOAEL	Equivalent to OECD 414	31680 mg/m <sup>3</sup> air	10 days (6h / day)	Mouse	Minor skeletal variations	Foetus	Read-across
Maternal toxicity (Inhalation (vapours))	NOAEL	Equivalent to OECD 414	10560 mg/m <sup>3</sup> air	10 days (6h / day)	Mouse	No effect		Read-across
	LOAEL	Equivalent to OECD 414	31680 mg/m <sup>3</sup> air	10 days (6h / day)	Mouse	Lung tissue affection/degeneration	Lungs	Read-across
Effects on fertility (Inhalation (vapours))	NOAEL	Equivalent to OECD 416	31680 mg/m <sup>3</sup> air		Rat (male / female)	No effect		Read-across

## toluene

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEC	EPA OTS 798.4350	750 ppm	10 days (6h / day)	Rat (female)	No effect	Foetus	Experimental value
Maternal toxicity	NOAEC	EPA OTS 798.4350	750 ppm	10 days (6h / day)	Rat (female)	No effect		Experimental value
Effects on fertility	NOAEC (P)	OECD 416	2000 ppm	11 weeks (6h / day, 7 days / week)	Rat (male / female)	No effect		Experimental value

### Conclusion

Suspected of damaging the unborn child if inhaled.

## Aspiration hazard

Classification is based on the relevant ingredients

May be fatal if swallowed and enters airways.

## Toxicity other effects

### SAFETY SEAL PLUS

No (test)data on the mixture available

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## Chronic effects from short and long-term exposure

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Impairment of the nervous system.

## SECTION 12: Ecological information

### 12.1. Toxicity

#### SAFETY SEAL PLUS

No (test)data on the mixture available

Classification is based on the relevant ingredients

#### heptane

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LL50		5.738 mg/l	96 h	Oncorhynchus mykiss		Fresh water	QSAR; Nominal concentration
Acute toxicity crustacea	LC50		0.1 mg/l	96 h	Americamysis bahia	Semi-static system	Salt water	Experimental value
Toxicity algae and other aquatic plants	EL50		4.338 mg/l	72 h	Pseudokirchneriella subcapitata		Fresh water	QSAR; Biomass
	NOELR		0.97 mg/l	72 h	Pseudokirchneriella subcapitata		Fresh water	QSAR; Biomass
Long-term toxicity fish	NOELR		1.284 mg/l	28 day(s)	Oncorhynchus mykiss		Fresh water	QSAR; Growth rate
Long-term toxicity aquatic crustacea	NOEC	OECD 211	0.17 mg/l	21 day(s)	Daphnia magna	Static system	Fresh water	Read-across; GLP
Toxicity aquatic micro-organisms	EL50		22.6 mg/l	48 h	Tetrahymena pyriformis		Fresh water	QSAR; Nominal concentration

#### toluene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		5.5 mg/l	96 h	Oncorhynchus kisutch	Flow-through system	Fresh water	Experimental value
Acute toxicity crustacea	LC50	US EPA	3.78 mg/l	48 h	Ceriodaphnia dubia		Fresh water	Experimental value
Toxicity algae and other aquatic plants	EC50		134 mg/l	3 h	Chlorella vulgaris	Static system	Fresh water	Experimental value; Nominal concentration
Long-term toxicity fish	NOEC		1.4 mg/l	40 day(s)	Oncorhynchus kisutch	Flow-through system	Fresh water	Experimental value; Growth rate
Long-term toxicity aquatic crustacea	NOEC	US EPA	0.74 mg/l	7 day(s)	Ceriodaphnia dubia		Fresh water	Experimental value; Reproduction
Toxicity aquatic micro-organisms	EC50		84 mg/l	24 h	Nitrosomonas	Static system	Fresh water	Experimental value

### Conclusion

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

### 12.2. Persistence and degradability

#### heptane

##### Biodegradation water

Method	Value	Duration	Value determination
	70 %; Oxygen consumption	10 day(s)	Experimental value

##### Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
SRC AOP v1.92	18.68 h	1500000 /cm <sup>3</sup>	Calculated value

#### toluene

##### Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	100 %	14 day(s)	Experimental value

##### Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	2.6 day(s)		Literature study

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## Conclusion

Contains readily biodegradable component(s)

## 12.3. Bioaccumulative potential

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#### Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

heptane

#### BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF	BCFBAF v3.00	552			Calculated value

#### Log Kow

Method	Remark	Value	Temperature	Value determination
		4.66		Experimental value

toluene

#### BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		90	72 h	Leuciscus idus	Experimental value

#### Log Kow

Method	Remark	Value	Temperature	Value determination
Other		2.73	20 °C	Experimental value

## Conclusion

Contains bioaccumulative component(s)

## 12.4. Mobility in soil

heptane

#### (log) Koc

Parameter	Method	Value	Value determination
log Koc	SRC PCKOCWIN v2.0	2.38	Calculated value

#### Percent distribution

Method	Fraction air	Fraction biota	Fraction sediment	Fraction soil	Fraction water	Value determination
Mackay level III	79 %	0 %	10 %	3.8 %	7.8 %	Calculated value

## Conclusion

Contains component(s) with potential for mobility in the soil

## 12.5. Results of PBT and vPvB assessment

Does not contain component(s) that meet(s) the criteria of PBT and/or vPvB as listed in Annex XIII of Regulation (EC) No 1907/2006.

## 12.6. Other adverse effects

### SAFETY SEAL PLUS

#### Greenhouse gases

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014)

#### Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

## SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

### 13.1. Waste treatment methods

#### 13.1.1 Provisions relating to waste

##### European Union

Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).

07 02 04\* (wastes from the MFSU of plastics, synthetic rubber and man-made fibres: other organic solvents, washing liquids and mother liquors). Depending on branch of industry and production process, also other waste codes may be applicable.

#### 13.1.2 Disposal methods

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into drains or the environment. Dispose of at authorized waste collection point.

#### 13.1.3 Packaging/Container

##### European Union

Waste material code packaging (Directive 2008/98/EC).

15 01 10\* (packaging containing residues of or contaminated by dangerous substances).

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## SECTION 14: Transport information

### Road (ADR)

14.1. UN number	UN number	1133
14.2. UN proper shipping name	Proper shipping name	Adhesives
14.3. Transport hazard class(es)	Hazard identification number	33
	Class	3
	Classification code	F1
14.4. Packing group	Packing group	II
	Labels	3
14.5. Environmental hazards	Environmentally hazardous substance mark	yes
14.6. Special precautions for user	Special provisions	640D
	Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

### Rail (RID)

14.1. UN number	UN number	1133
14.2. UN proper shipping name	Proper shipping name	Adhesives
14.3. Transport hazard class(es)	Hazard identification number	33
	Class	3
	Classification code	F1
14.4. Packing group	Packing group	II
	Labels	3
14.5. Environmental hazards	Environmentally hazardous substance mark	yes
14.6. Special precautions for user	Special provisions	640D
	Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

### Inland waterways (ADN)

14.1. UN number	UN number	1133
14.2. UN proper shipping name	Proper shipping name	Adhesives
14.3. Transport hazard class(es)	Class	3
	Classification code	F1
14.4. Packing group	Packing group	II
	Labels	3
14.5. Environmental hazards	Environmentally hazardous substance mark	yes
14.6. Special precautions for user	Special provisions	640D
	Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

### Sea (IMDG/IMSBC)

14.1. UN number	UN number	1133
14.2. UN proper shipping name	Proper shipping name	adhesives
14.3. Transport hazard class(es)	Class	3
14.4. Packing group	Packing group	II
	Labels	3
14.5. Environmental hazards	Marine pollutant	P

# SAFETY SEAL PLUS

Environmentally hazardous substance mark	yes
14.6. Special precautions for user	
Special provisions	
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code	
Annex II of MARPOL 73/78	Not applicable, based on available data

## Air (ICAO-TI/IATA-DGR)

14.1. UN number	
UN number	1133
14.2. UN proper shipping name	
Proper shipping name	Adhesives
14.3. Transport hazard class(es)	
Class	3
14.4. Packing group	
Packing group	II
Labels	3
14.5. Environmental hazards	
Environmentally hazardous substance mark	yes
14.6. Special precautions for user	
Special provisions	A3
Passenger and cargo transport	
Limited quantities: maximum net quantity per packaging	1 L

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### European legislation:

VOC content Directive 2010/75/EU

VOC content	Remark
51.6 %	
428.31 g/l	

Indicative occupational exposure limit values (Directive 98/24/EC, 2000/39/EC and 2009/161/EU)

Product name	Skin resorption
Toluene	Skin

REACH Annex XVII - Restriction

Contains component(s) subject to restrictions of Annex XVII of Regulation (EC) No 1907/2006: restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

	Designation of the substance, of the group of substances or of the mixture	Conditions of restriction
· heptane · toluene	Liquid substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: (a) hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F; (b) hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10; (c) hazard class 4.1; (d) hazard class 5.1.	<ol style="list-style-type: none"> <li>1. Shall not be used in:                             <ul style="list-style-type: none"> <li>— ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,</li> <li>— tricks and jokes,</li> <li>— games for one or more participants, or any article intended to be used as such, even with ornamental aspects,</li> </ul> </li> <li>2. Articles not complying with paragraph 1 shall not be placed on the market.</li> <li>3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:                             <ul style="list-style-type: none"> <li>— can be used as fuel in decorative oil lamps for supply to the general public, and,</li> <li>— present an aspiration hazard and are labelled with H304,</li> </ul> </li> <li>4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).</li> <li>5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:                             <ol style="list-style-type: none"> <li>a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil — or even sucking the wick of lamps — may lead to life-threatening lung damage";</li> <li>b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter may lead to life threatening lung damage";</li> <li>c) lamp oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.</li> </ol> </li> <li>6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled H304, intended for supply to the general public.</li> <li>7. Natural or legal persons placing on the market for the first time lamp oils and grill</li> </ol>

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		lighter fluids, labelled with H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.'
· heptane · toluene	Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to that Regulation or not.	1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following: — metallic glitter intended mainly for decoration, — artificial snow and frost, — “whoopee” cushions, — silly string aerosols, — imitation excrement, — horns for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs. 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with: “For professional users only”. 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/ 324/EEC. 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.
· toluene	Toluene	Shall not be placed on the market, or used, as a substance or in mixtures in a concentration equal to or greater than 0,1 % by weight where the substance or mixture is used in adhesives or spray paints intended for supply to the general public.

## National legislation Belgium

### SAFETY SEAL PLUS

No data available

#### toluene

Résorption peau	Toluène; D; La mention “D” signifie que la résorption de l’agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l’exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l’agent dans l’air.
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## National legislation The Netherlands

### SAFETY SEAL PLUS

Waterbezwaarlijkheid	A (1); Algemene Beoordelingsmethodiek (ABM)
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#### toluene

SZW - Lijst van voor de voortplanting giftige stoffen (ontwikkeling)	Toluene; 2; Suspected of damaging the unborn child.
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## National legislation France

### SAFETY SEAL PLUS

No data available

#### toluene

Risque de pénétration percutanée	Toluène; PP
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## National legislation Germany

### SAFETY SEAL PLUS

WGK	2; Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (AwSV) - 18. April 2017
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#### heptane

TA-Luft	5.2.5/l
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#### toluene

TA-Luft	5.2.5/l
TRGS900 - Risiko der Fruchtschädigung	Toluol; Y; Risiko der Fruchtschädigung braucht bei Einhaltung des Arbeitsplatzgrenzwertes und des biologischen Grenzwertes nicht befürchtet zu werden
Hautresorptive Stoffe	Toluol; H; Hautresorptiv

## National legislation United Kingdom

### SAFETY SEAL PLUS

No data available

#### toluene

Skin absorption	Toluene; Sk
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## Other relevant data

### SAFETY SEAL PLUS

No data available

#### toluene

IARC - classification	3; Toluene
TLV - Carcinogen	Toluene; A4

## 15.2. Chemical safety assessment

No chemical safety assessment has been conducted for the mixture.

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## SECTION 16: Other information

### Full text of any H-statements referred to under heading 3:

- H225 Highly flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
- H361d Suspected of damaging the unborn child if inhaled.
- H373 May cause damage to organs (central nervous system) through prolonged or repeated exposure if inhaled.
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.

(*)	INTERNAL CLASSIFICATION BY BIG
ADI	Acceptable daily intake
AOEL	Acceptable operator exposure level
CLP (EU-GHS)	Classification, labelling and packaging (Globally Harmonised System in Europe)
DMEL	Derived Minimal Effect Level
DNEL	Derived No Effect Level
EC50	Effect Concentration 50 %
ERC50	EC50 in terms of reduction of growth rate
LC50	Lethal Concentration 50 %
LD50	Lethal Dose 50 %
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, Bioaccumulative & Toxic
PNEC	Predicted No Effect Concentration
STP	Sludge Treatment Process
vPvB	very Persistent & very Bioaccumulative

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.