

**Identification of the substance/mixture and of the company/undertaking:**

**Product identifier**

**Trade name:** Developer

**Article number:** BEA - N

**Relevant identified uses of the substance or mixture and uses advised against**

**Application of the substance / the preparation**

As **DEVELOPER** at the penetration process by colours acc. to EN ISO 3452-1 [EN 571-1] (DIN 54 152 part 1) for finding surface cracks.

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier**

Helmut Klumpf

Technische Chemie KG

Industriestr. 15

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**Emergency telephone number:** a.m. or next Emergency phone:

**2. Hazards identification**

**Classification of the substance or mixture**

GHS02 Flammable Aerosol, Category 1

GHS07 Corrosion

Eye Irrit. 1 H318 Causes serious eye damage.

GHS07 Exclamation mark

STOT SE. 3 H336 May cause drowsiness or dizziness.

**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labeled according to the CLP regulation.



**Hazard pictograms** GHS02, GHS05, GHS07

**Signal word** Danger

**Hazard statements**

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.

H318 Causes serious eye damage.

H336 May cause drowsiness or dizziness.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

**Results of PBT and PvB assessment**

**PBT:** Not applicable

**vPvB:** Not applicable

**3. Composition/information on ingredients**

**Chemical characterization:** Aerosol with mixture of substances listed below and non-hazardous additions.

<b>Components:</b>	<b>Name of chemical</b>	<b>weight %</b>
CAS: 71-23-8 EINECS: 200-746-9	butanone GHS02 Flam. Liq. 2, H225; GHS07 Eye Dam.1, H318; STOT SE 3, H336	50 - 80
CAS: 106-97-8 EINECS: 203-448-7	n-butane GHS02 Flam. Gas 1, H220; GHS04	10 - 20
CAS: 74-98-6 EINECS: 200-827-9	propane GHS02 Flam. Gas 1, H220; GHS04	10 - 20

## 4. First aid measures

### Description of first aid measures

#### General information

Move victim to fresh air, lie comfortably and loosen tight clothing.

Personal protection for the First Aider.

Instantly remove any clothing soiled by the product.

**After inhalation** Supply fresh air; consult doctor in case of symptoms.

**After skin contact** Immediately wash with water and soap and rinse thoroughly.

#### After eye contact

Rinse opened eye for at least 15 minutes under running water. Get medical attention if irritation occurs.

#### After swallowing

Do not induce vomiting.

Rinse out mouth and then drink plenty of water.

**Information for doctor** Gastric lavage may be due to aspiration only under endotracheal intubation.

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

Breathing difficulty

Dizziness

Dazed

Unconsciousness

#### Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5. Fire fighting measures

### Description of first aid measures

#### Suitable extinguishing agents

water haze, water spray-jet, alcohol resistant foam.

use dry extinguishers like power, sand just for small fires.

**For safety reasons unsuitable extinguishing agents** Water with a full water jet.

**Special hazards arising from the substance or mixture** Carbon monoxide (CO)

#### Advice for fighters

**Protective equipment:** Wear self-contained breathing apparatus.

#### Additional information:

Cool containers at risk with water spray jet.

Danger for bursting of aerosols when heated for more than 50°C.

Aerosols that burst in fire can be mightily shot away.

## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Bring persons out of danger.

#### Environmental precautions:

Do not allow product to reach sewage system or water bodies.

Prevent material from reaching sewage system, holes and cellars.

Inform respective authorities in case product reaches water or sewage system.

Dilute with much water. Prevent from spreading (e.g. by damming-in or oil barriers).

#### Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

#### Reference to other sections

See Section 8 for information on personal protection equipment.

## 7. Handling and storage

### Handling:

#### Advice on safe handling:

Provide good room ventilation even at ground level (vapours are heavier than air).

#### Advice on protection against fire and explosion:

Keep away from sources of ignition.

Do not smoke.

Take precautionary measures against static discharges.



**Storage:**

**Requirements for storage rooms and vessels:**

Filled aerosols must not be exposed to:

1. Heating of more than 50°C by sun beams or other heat sources.
2. Storage in gates, passages, wells of staircases, buildings, floors, and lofts.

Keep container in a well-ventilated place.

**Advice on storage compatibility:**

Do not store together with oxidizing agents.

**Further information on storage conditions:**

Keep container in a well-ventilated place.

**Classification acc. to prescription:**

Aerosols (Aerosol containers) (TRG 300)  
 Ordinance on Industrial Safety and Health  
 TRGS 510.

Storage class: 2B

**8. Exposure controls/personal protection**

**Additional information about design for technical systems:**

No other information's, see point 7.

**Control parameters**

Components with critical values that require monitoring at the workplace:	
<b>71-23-8 propan-1-ol (&gt; 50%)</b>	
<b>WEL</b>	Short-term value: 625 mg/m <sup>3</sup> , 250 ppm Long-term value: 500 mg/m <sup>3</sup> , 200 ppm Sk
<b>106-97-8</b>	<b>butane (10 – 20%)</b>
<b>WEL</b>	2.400 mg/m <sup>3</sup> , 1.000 ml/m <sup>3</sup> ; 4(II); DFG
<b>74-98-6</b>	<b>propane (10 – 20%)</b>
<b>WEL</b>	1.800 mg/m <sup>3</sup> , 1.000 ml/m <sup>3</sup> ; 4(II); DFG

**Exposure controls**

**Personal protection equipment**

**General protective and hygienic measures**

- Keep away from foodstuffs, beverages and food.
- Instantly remove any soiled and impregnated garments.
- Wash hands during breaks and at the end of the work.
- Avoid contact with the eyes and skin.

**Breathing equipment:**

If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable.

In case of brief exposure or low pollution use breathing filter apparatus. In case of intensive or longer exposure use breathing apparatus that is independent of circulating air.

Half-face filter respirator Type A.

**Protection of hands:** Protective gloves.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Tightly sealed safety glasses.

**Body protection:** Protective work clothing.

**9. Physical and chemical properties**

**Information on basic physical and chemical properties General Information**

**Appearance:**

Form: Aerosol                      Colour: white                      Smell: alcoholic



<b>Data relevant for safety:</b>	(Product without power gas)	
Boiling point/Boiling range:	97 °C	
Flash point:	21,5 - 25,5 °C	
Ignition temperature:	360 °C	
Danger of explosion:	The Product is not explosive. However, formation of explosive air/steam mixture is possible.	
Critical values for explosion:	Lower e.l.:	2,1 Vol.%
	Upper e.l.:	13,5 Vol.%
Steam pressure at 20°C:	19 hPa	
Density (20°C):	0,8 g/cm <sup>3</sup>	
Solubility in water (20°C):	Fully miscible	

## 10. Stability and reactivity

### Reactivity

### Chemical stability

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** Possible formation of peroxide.

## 11. Toxicological information

### Toxicity test:

### Acute Toxicity (LD/LC<sub>50</sub>-values relevant to classification):

LD/LC <sub>50</sub> values that are relevant for classification:		
71-23-8 propan-1-ol		
Oral	LD50	8.000 mg/kg (rat)
Dermal	LD50	4.032 mg/kg (rabbit)
Inhaled	LC50/4 h	33,8 mg/l (rat) (4h/OECD 403)

### Primary irritant effect:

#### Skin corrosion/irritation

Prolonged contact may cause redness or irritation.

Possible due to defatting action on prolonged contact may damage the skin.

#### Serious eye damage/irritation

Causes serious eye damage.

#### Irritation of the respiratory system

Vapor concentrations above the recommended guideline value workplace cause eye and respiratory tract.

Headache, dizziness and disorders of the central nervous system can also be caused.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

**Acute effects (acute toxicity, irritation and corrosivity)** May cause respiratory irritation.

**CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**

**Germ cell mutagenicity** Based on available data, the classification criteria are not met.

**Carcinogenicity** Based on available data, the classification criteria are not met.

**Reproductive toxicity** Based on available data, the classification criteria are not met.

**STOT-single exposure** May cause drowsiness or dizziness.

**STOT-repeated exposure** Based on available data, the classification criteria are not met.

**Aspiration hazard** Based on available data, the classification criteria are not met.

## 12. Ecological information

### Toxicity

Aquatic toxicity:	
71-23-8 propan-1-ol	
EC 50	> 1.000 mg/l (Chronische Bakterientoxizität) (3h/ Belebtschlamm, (OECD 209)) 17.700 mg/l (Akute Bakterientoxizität) ((Photobacterium phosphoreum)) 3.644 mg/l (Akute Daphnientoxizität) (Daphnia magna, (DIN 38412, Teil 11))
LC 50	4.555 mg/l (Akute Fischtoxizität (96h)) ((Pimephales promelas))

### Persistence and degradability Easily biodegradable

**Degree of elimination:** > 83%

### Bioaccumulative potential

Concentration in organisms is not expected. log P(o/w): <1

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:**

During correct introduction of low concentrations to adapted biological purification plants no disturbances the degradation of the activated sludge can be expected.

**Additional ecological information:**

**CSB-value:** ca. 2230 mg O<sub>2</sub>/g

**BSB5-value:** 1630 mg O<sub>2</sub>

**General notes:**

The product may not be released into the aquatic environment without preliminary treatments (biological purification plant). Water hazard class 1 (Assessment by list): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

**Results of PBT and vPvB assessment**

**PBT: Not applicable.**

**vPvB: Not applicable.**

**Other adverse effects** No further relevant information available.

### 13. Disposal considerations

**Product:**

**Recommendations:**

Hand over to authorized disposal agency.

**Waste code No.:**

EAV: 14 06 03 term: Mixture of solvent

**Contaminated packaging:**

**Recommendations:**

Container must be completely emptied and must not be opened by force.

Hand over to authorized disposal agency.

**Waste code No.:**

EAV: 15 01 10 term: Iron-metal containers with a contaminated rest of the contents

**Waste treatment methods**

**Recommendations**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal must be made according the local authority regulations.

### 14. Transport information

**Land transport**

UN-No.: 1950 Identification: DRUCKGASPACKUNGEN flammable

Class: 2 Package Group: -- Tunnel restriction code: D

Classifications code: 5 F shipment category: 2

Labelling of the Package: UN 1950 AEROSOLE Label-no.: 2.1

Packing instruction: P 003, MP 9 Limited Quantities Only: 1L (Package ≤ 30 kg)

**Marine transport IMDG/GGVSee**

UN-No.: 1950 Class: 2.1 Package Group: --

EMS-No.: F-D, S-U Label-no.: -- Marine Pollutant: -- Label: --

Proper Shipping Name: Aerosols (Limited Quantities Only) (Package ≤ 30 kg)

**Air transport ICAO-TI and IATA-DGR**

Class/Division: 2.1 UN/ID-No.: 1950

Package Group: --, Label: 2.1

Packing inst. Passenger aircraft: 203/Y203 Max. net/Package: 75 kg/30 kg

Packing inst. Cargo aircraft: 203 Max. net/Package: 150 kg

Proper Shipping Name: Aerosols, flammable

### 15. Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.



**Relevant phrases**

- H220 Extremely flammable gas.
- H222 Extremely flammable aerosol.
- H225 Highly flammable liquid and vapour.
- H229 Pressurised container: May burst if heated.
- H318 Causes serious eye damage.
- H336 May cause drowsiness or dizziness.

**National regulations**

**Water hazard class:** Water hazard class 1 (Assessment by list): slightly hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16. Other information**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally contractual relationship.

**Department issuing data specification sheet:**

**Contact:** Helmut. Klumpf Technische Chemie KG

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

GefStoffV: Gefahrstoffverordnung (Ordinance on Hazardous Substances, Germany)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent