

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

### Product identifier

**Trade name:** Developer (permanent)

**Article number:** BEW

**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 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.

GHS07 Exclamation mark

Eye Irrit. 2 H319 Causes serious eye irritation.

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, GHS07

**Signal word** Danger

### Hazard statements

H225 Highly flammable liquid and vapour.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

### Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

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

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing.

Rinse skin with water/shower.

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

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

P403 + P233 EN Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### Other hazards

Leads to high vapour concentrations of anesthetic.

Evaporating liquid can readily form flammable mixtures at or above the flashpoint.

Danger of static electricity. Product can accumulate static, which can lead to an explosive electrical discharge.

### Results of PBT and PvB assessment

**PBT:** Not applicable, **vPvB:** Not applicable

## 3. Composition/information on ingredients

**Chemical characterization:** Mixture of substances listed below and non-hazardous additions.

Components:	Name of chemical	weight %
CAS: 67-63-0 EINECS: 200-661-7	propan-2-ol GHS02 Flam. Liq.2, H225; GHS07 Eye Irrit. 2, H319; STOT SE. 3, H336	> 50
CAS: 78-93-3 EINECS: 201-159-0	2-Butanon GHS02 Flam. Fl. 2, H225; GHS07 Eye Irrit. 2, H319; STOT SE. 3, H336	< 5
CAS: 13463-67-7 EG-Nr: 236-675-5	titan (IV)-oxid, EUH 211	< 0,5

## 4. First aid measures

### Description of first aid measures

#### General information

- Instantly remove any clothing soiled by the product.
- If you feel uncomfortable consult a doctor and show the label if possible.
- Personal protection for the First Aider.

#### After inhalation

- Take affected persons into the open air and position comfortably
- Remove the person from the danger zone under proper respiratory protection. If breathing is irregular or stopped, give artificial respiration. Comfortable for the patients and provide medical help.
- Seek medical treatment in case of complaints.

#### After skin contact

- Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

#### After eye contact

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

#### After swallowing

- In case of persistent symptoms consult doctor.
- Do not induce vomiting - aspiration!
- Do not vomit. Swallow activated carbon and sodium sulphate.

#### Information for doctor

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

- Headache, Dizziness, Sickness
- Tiredness and other effects on the CNS.
- Signs and symptoms of eye irritation may include:  
Burning sensation, redness, swelling and / or blurred vision. Dry skin.

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

- Causes depression of the central nervous system. Potential of a chemical pneumonia. Information from a doctor or poison control center to obtain.
- If ingested, material may be aspirated into the lungs and cause chemical pneumonia. Treat appropriately.

## 5. Fire fighting measures

### Description of first aid measures

#### Suitable extinguishing agents

- CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.
- foam, water haze, water spray-jet.

#### For safety reasons unsuitable extinguishing agents

- Water with a full water jet.

#### Special hazards arising from the substance or mixture

- Hazardous Combustion Products: Smoke, Fume, Incomplete combustion products, Oxides of carbon.
- Can be released in case of fire: Carbon dioxide (CO<sub>2</sub>), Carbon monoxide (CO)

#### Advice for fighters

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

#### Additional information:

## 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

### Precautions for safe handling

Keep containers tightly sealed. Ensure good ventilation/exhaustion at the workplace.  
Open and handle container with care. Prevent formation of aerosols.  
Use only in well ventilated areas. Avoid contact with eyes and skin.  
Do not breathe gas / fumes / vapour / spray.

### Advice on protection against fire and explosion:

Keep ignition sources away - Do not smoke. Protect against electrostatic charges.  
Use explosion-proof apparatus / fittings and spark-proof tools.  
Keep away from heat and direct sunlight.  
Flammable mixtures may be formed in empty containers.  
Fumes can combine with air to form an explosive mixture.  
Have fire extinguishing equipment ready in case of nearby fire.  
Highly volatile, flammable constituents are released during processing.

### Storage:

#### Requirements to be met by storerooms and containers:

Store in cool location.  
Use only containers specifically permitted for this substance/product.  
Country-specific requirements for the storage of low water-polluting substances have to be aware.

**Suitable lining material:** Carbon steel, stainless steel, polyethylene, polypropylene, polyester, Teflon

#### Unsuitable container- / liner materials:

Natural rubber; butyl rubber, ethylene-propylene-diene monomer (EPDM); polystyrene Aluminum, cast iron

#### 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:

Storage class: 3

## 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:

Not required.

Components with critical values that require monitoring at the workplace:	
<b>67-63-0</b>	<b>propan-2-ol (&gt; 50 %)</b>
<b>WEL</b>	Long-term value: 500 mg/m <sup>3</sup> , 200 ppm
<b>78-93-3 2</b>	<b>butanone (&lt; 5 %)</b>
<b>WEL</b>	Short-term value: 899 mg/m <sup>3</sup> , 300 ppm Long-term value: 600 mg/m <sup>3</sup> , 200 ml/m <sup>3</sup> ; Sk

### Exposure controls

The level of protection and types of controls necessary will vary depending upon potential exposure conditions.

### 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:

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.  
Use breathing protection in case of insufficient ventilation.  
If user operations generate dust, fume or mist, use local exhaust ventilation to keep exposure to dust below the exposure limits.

**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:**

A chemical goggles is recommended.

Tightly sealed safety glasses.

Gauze goggles

**Body protection:** Protective work clothing.

## 9. Physical and chemical properties

**General Information**

Form: Aerosol

Colour: white

Smell: alcoholic

**Data relevant for safety:**

Boiling temperature:

82 °C

Flash point:

12 °C

Ignition temperature:

425 °C

Explosive properties:

The Product is not explosive, but may form flammable/explosive vapour-air mixture.

Explosion limits

Lower e.l.:

2 Vol.%

Upper e.l.:

12 Vol.%

Vapour pressure (20°C):

48 mbar

Density (20°C):

0,862 g/cm<sup>3</sup>

Solubility in water (20°C):

1,000 g/l (Solvent)

## 10. Stability and reactivity

**Reactivity**

**Chemical stability**

The material is stable under normal conditions.

Under normal storage conditions peroxides can accumulate which may explode in heat or shock. Distillation or evaporation increase the formation of peroxides and thus also the risk of explosion.

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

**Possibility of hazardous reactions**

Reacts with strong oxidizing agents.

Hazardous polymerization will not occur.

**Conditions to avoid**

Avoid shock, friction, heat, sparks, open flame and other ignition sources. Prevent electrostatic charging.

**Incompatible materials:**

Reacts with strong oxidizing agents.

Reacts with strong acids.

**Hazardous decomposition products:**

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases, including carbon monoxide, carbon dioxide and other organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

This product does not decompose at ambient temperatures.

## 11. Toxicological information

**Information on toxicological effects**

**Acute Toxicity: (LD/LC<sub>50</sub>-values that are relevant for classification):**

LD/LC <sub>50</sub> values that are relevant for classification:		
67-63-0 propan-2-ol Oral LD50 4570		
Oral	LD50	4.570 mg/kg (rat)
Dermal	LD50	13.400 mg/kg (rabbit)
Inhaled	LC50/4 h	30 mg/l (rat) (6h/ LC50 > 25.000 mg/m <sup>3</sup> (steam))

**Primary irritant effect:**

**on the skin:**

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

weak irritant effect

Data available. Test results or other study results do not meet the criteria for classification.

**on the eye:** Irritant effect.

**Irritation of the respiratory system**

slightly irritating

Test results or other study results do not meet the criteria for classification.

**Sensitization:** No sensitizing effect known.

**Additional toxicological information:**

Increased concentrations of vapour may cause irritation of the eyes and respiratory tract. Headache, dizziness and disorders of the central nervous system can also be caused.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Taking or vomiting can cause small amounts of liquid aspirated into the lungs, chemical pneumonitis or pulmonary edema.

## 12. Ecological information

**Toxicity**

Material - Not expected to be harmful to aquatic organisms.

Aquatic toxicity:	
67-63-0	propan-2-oll
LC 50	> 100 mg/l (alg) > 100 mg/l (Daphnia) > 100 mg/l (fi2) (96h) > 100 mg/l (kru) (48h/)

**Persistence and degradability**

This substance is rapidly degraded in the air.

Easily biodegradable

**Other information:** The product is easily biodegradable.

## 13. Disposal considerations

**Product:**

**Recommendations:**

Disposal must be made according the local authority regulations.

This material and / or its container must be disposed of as hazardous waste.

The product is suitable for burning in an enclosed, controlled burner suitable for fuel value or disposal by supervised incineration at very high temperatures at which it does not come to the formation of undesired inflammatory products.

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

**Uncleaned packaging's:**

**Recommendations:**

Empty contaminated packaging's thoroughly. They can be recycled after thorough and proper cleaning.

Packaging's that cannot be cleaned are to be disposed of in the same manner as the product.

Empty container completely. Residues may cause an explosion.

Do not pressurize containers, cut, weld, braze, solder, drill, grind. Don not expose containers to heat, flames, sparks, static electricity or other flammable products. They may explode and cause injury or death.

**Recommended cleaning agent:** Water, if necessary with cleaning agent.

## 14. Transport information

**Land transport**

UN-No.: 1987      Identification:      ALKOHOLE, N.A.G. (Isopropanol)  
Class:    3      Package Group:    II      Tunnel restriction code: D/E  
Classifications code: F1      shipment category: 2      Label-no.: 3  
Packing instruction:    P 001, MP 19      Limited Quantities Only: 1L (LQ)

**Marine transport IMDG/GGVSee**

UN-No.: 1987    Class: 3.2    Package Group: II  
EMS-No.: F-E, S-D    Label-no.: 3    Marine Pollutant: --    Label: --  
Proper Shipping Name:    Alcohols, n.o.s. (Isopropyl alcohol (2-Propanol))

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

Class/Division: 3      UN/ID-No.: 1987  
Package Group: II      Label: 3  
Packing inst. Passenger aircraft: 305/Y305      Max. net/Package: 5 L / 1 L  
Packing inst. Cargo aircraft: 307      Max. net/Package: 60 L  
Proper Shipping Name: Alcohols, n.o.s. (mixture of Isopropyl alcohol)

## 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**

- H225 Highly flammable liquid and vapour.
- H319 Causes serious eye irritation.
- H336 May cause drowsiness or dizziness.
- EUH211 Warning! Hazardous respirable droplets may be formed when sprayed.  
Do not breathe spray or mist.

**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