

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

D - 45699 Herten Phone.: +49(0)2366 1003 - 0 Fax: +49(0)2366 1003 - 11 Email: klumpf@diffu-therm.de

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

2. Hazards identification

Classification of the substance or mixture

GHS02 Flammable Aerosol, Category 1

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

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated.

H319 Causes serious eye irritation.

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.

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.

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.

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	25 - 60
CAS: 106-97-8 EINECS: 203-448-7	n-butane GHS02 Flam. Gas 1, H220; GHS04	10 - 30
CAS: 74-98-6 EINECS: 200-827-9	propane GHS02 Flam. Gas 1, H220; GHS04	10 - 30
CAS: 78-93-3 EINECS: 201-159-0	butanone GHS02 Flam. Liq. 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

CO₂, 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 (CO₂), 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:

Not required.

Components with critical values that require monitoring at the workplace:	
67-63-0	propan-2-ol (25 - 60%)
WEL	Long-term value: 500 mg/m ³ , 200 ml/m ³
106-97-8	butane (10 - 30%)
WEL	2.400 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG
74-98-6	propane (10 - 30%)
WEL	1.800 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG
78-93-3 2	butanone (> 5%)
WEL	600 mg/m ³ , 200 ml/m ³ , H, Y; (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:

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: (Product without power gas)

Boiling temperature: 82 °C

Flash point: 12 °C

Ignition temperature: > 350 °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/cm³

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 ₅₀ -values that are relevant for classification):		
67-63-0	propan-2-ol	
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 ³ t)

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 vapor 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:

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.
- 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