

SAFETY DATA SHEET

according to Regulation (EC) 1907/2006 (REACH), as amended by 2020/878/EU



DIFFU - THERM® Cleaner BRE - 2 (Aerosol)

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

1.1. Product identifier

Trade name: Cleaner
Article number: BRE - 2
UFI 4RN3-010D-Y00G-CKAC

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

Application of the substance / the preparation

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

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier

Helmut Klumpf
Technische Chemie GmbH & Co. KG
Industriestr. 15
D - 45699 Herten Phone.: +49(0)2366 1003 - 0 E-mail: info@diffu-therm.de

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

2. Hazards identification

2.1. Classification of the substance or mixture

REGULATION (EC) No 1272/2008			
Hazard class	Category	Hazard class and category	Hazard statement
Aerosol	Category 1	--	H222, H229
Eye irritation	Category 2	--	H319

2.2. 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.

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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C.

2.3. Other hazards

The results of the PBT and vPvB assessment can be found in subsection 12.5

3. Composition/information on ingredients

Chemical characterization: Aerosol with mixture of substances listed below.

Components:	Name of chemical	weight %
CAS: 64-17-5 EINECS: 200-578-6	ethanol GHS02 Flam. Fl. 2, H225; GHS07 Eye Irrit. 2, H319	≥ 50
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
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	< 1
CAS: 78-93-3 EINECS: 201-159-0	butanone GHS02 Flam. Fl. 2, H225; GHS07 Eye Irrit. 2, H319; STOT SE3, H336	< 1

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4. First aid measures

4.1. 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

4.2. 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.

4.3. 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. Firefighting measures

5.1. Extinguishing media:

Suitable extinguishing media:

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media:

High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting:

Highly flammable liquid and vapour. The vapour may be invisible, heavier than air and spread along ground.
Vapours may form explosive mixtures with air. Flash back possible over considerable distance.

Hazardous combustion Product: Carbon monoxide, Carbon dioxide (CO₂)

5.3. Advice for firefighters

In case of fire, wear self-contained breathing apparatus. Wear personal protective equipment.

Additional information's:

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.
separately. This must not be discharged into drains.

6. Accidental release measures

6.1. 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.

6.2. 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).

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6.3. Methods and material for containment and cleaning up:

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

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

7. Handling and storage

Handling:

7.1. Precautions for safe handling:

Advice on safe handling:

Ensure adequate ventilation. Use personal protective equipment.
Avoid contact with skin, eyes and clothing. Do not inhale vapours or spray mist.

Hygiene measures:

Keep away from food, drink and animal feed. Do not eat, drink or smoke in the area of application. Wash hands before breaks and at the end of work. Remove soiled clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities:

Requirements for storage areas:

Store in a solvent-proof place in the original container. Store on a floor.

Advice on protection against fire and explosion:

Keep away from sources of ignition - Do not smoke. Vapours may be invisible, heavier than air and spread along the ground. Vapours may form explosive mixtures with air. Take measures against electrostatic charging.
Use only in a place with explosion-proof equipment.

Further information on storage conditions:

Keep tightly closed in a dry and cool place. Keep away from direct sunlight. Keep in a well-ventilated place.

Advice on common storage:

Incompatible with oxidizing agents. Do not store together with oxidizing and self-igniting products. Keep away from food, drink and animal feeding stuffs.

German storage class: 2B Aerosols flammable

8. Exposure controls/personal protection

Additional information about design of technical systems:

Electrical equipment must be suitable for temperature class T2. All equipment must comply VbF. Use explosion-proof auxiliary equipment for class EEx e II use.

8.1. Control parameters

Components with critical values that require monitoring at the workplace:		
64-17-5	ethanol	(≥ 50)
WEL	Long-term value: 1.920 mg/m ³ , 1.000 ml/m ³	
106-97-8	n-butane	(10 - 20%)
WEL	2.400 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG	
74-98-6	propane	(10 - 20%)
WEL	1.800 mg/m ³ , 1.000 ml/m ³ ; 4(II); DFG	
67-63-0	propan-2-ol	
WEL	Short-term value: 1.250 mg/m ³ , 500 ml/m ³ Long-term value: 999 mg/m ³ , 400 ml/m ³	
78-93-3	butanone	
WEL	Long-term value: 600 mg/m ³ , 200 ml/m ³ , H, Y; (DFG)	

8.2. 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

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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

9.1. Information on basic physical and chemical properties General Information

General Information

Form: Aerosol

Colour: clear

Smell: alcoholic

Data relevant for safety:

(Product without power gas)

Boiling temperature:	78 °C
Flash point:	10 - 13 °C
Ignition temperature:	363 - 425 °C
Explosion limits	Lower e.l.: 2,5 Vol.%
	Upper e.l.: 15 Vol.%
Vapour pressure (20°C):	56 - 60 hPa (20°C)
Density (20°C):	0,79 g/cm ³
Solubility in water (20°C):	soluble
pH value	5,5 - 8,5 (1 %)

9.2 Other information

The product is not explosive, but the formation of explosive vapor/air formation of explosive vapor/air mixtures is possible.

10. Stability and reactivity

10.1. Reactivity:

Vapours can form an explosive mixture with air. Vapours are heavier than air and spread across the floor.

10.2. Chemical stability: Advice: Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions:

Hazardous reactions: Vapours may form explosive mixture with air. Possible formation of peroxide.

10.4. Conditions to avoid: Heat, flames and sparks. Protect from direct sunlight. Temperatures above 40°C.

10.5. Incompatible materials: Oxidising agents, acids, alkali metals, alkaline earth metals, acetic anhydride.

10.6. Hazardous decomposition products:

In the event of fire, the following hazardous decomposition products can be produced: Carbon monoxide, carbon dioxide (CO₂)

11. Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Information on toxicological effects

Acute toxicity: Data for the product

Oral: Acute toxicity estimate: > 2.000 mg/kg (calculation method)

Inhalation: Acute toxicity estimate: > 20 mg/l (4 h; vapour) (calculation method)

Skin: No data available for the mixture itself. This information is included in the list of the component/components contained further down in this section.

Irritation:

Skin: Not classified, based on the calculation method of the CLP Regulation.

Eyes: Causes serious eye irritation.

Sensitisation: No sensitising effect known.

CMR effects

CMR properties

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Carcinogenicity:	It is not considered to be a carcinogen. Contains no component classified as a carcinogen
Mutagenicity:	It is not considered to be mutagenic. Contains no component classified as mutagenic
Reproductive toxicity:	It is not considered toxic to reproduction. Contains no ingredient classified as toxic for reproduction

Specific target organ toxicity, single exposure:

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity, repeated exposure:

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Aspiration hazard: Not classified for aspiration toxicity.

Further information:

Other information on toxicity:

Ethanol is a Nerves- and Cell poison which, due to its good solubility in water and fats, can have a toxic effect on the entire organism depending on the concentration. The good lipid solubility is responsible for the strong main effect on the CNS. Absorption via the mucous membranes is rapid, absorption via the outer skin is less pronounced. Elimination is by oxidative degradation, secondarily unchanged via exhalation and kidneys. High concentrations (> 60%) lead to damage to the mucous membranes due to dehydration. Depending on the amount ingested and the accompanying circumstances, various states of intoxication with loss of self-control, dizziness and vomiting occur after the euphoric stage. The simultaneous presence of solvents, amines, aromatic nitro compounds and a number of drugs has a mutually potentiating effect. Inhalation of the aerosol can cause irritation of the mucous membranes.

Acute toxicity Skin: LD50

Ethanol CAS No. 64-17-5 > 2.000 mg/kg (rabbit) (OECD Test Guideline 402)

Butanone CAS No. 78-93-3 > 5.000 mg/kg (rabbit) (OECD Test Guideline 402)

Propan-2-ol CAS No. 67-63-0 13.900 mg/kg (rabbit) (OECD Test Guideline 402)

12. Ecological information

12.1. Toxicity:

Ingredient Ethanol CAS-No. 64-17-5

Fish:

LC50 15.300 mg/l (Pimephales promelas (fathead minnow); 96 h) (flow-through test; US-EPA)

LC50 11.200 mg/l (Salmo gairdneri; 24 h) (flow-through test; US-EPA)

LC50 13.000 mg/l (Oncorhynchus mykiss; 96 h) (OECD test guideline 203)

Toxicity to daphnia and other aquatic invertebrates:

EC50 858 mg/l (Artemia salina; 24 h) (OECD Test Guideline 202) Seawater

EC50 12.340 mg/l (Daphnia magna (large water flea); 48 h) (ASTM E 729-80) Fresh water

LC50 5.012 mg/l (Ceriodaphnia dubia (water flea); 48 h) (static test; ASTM E 729-80) Fresh water

Algae:

EC50 275 mg/l (Chlorella vulgaris (freshwater algae); 72 h) (static test; endpoint: growth rate; OECD test guideline 201) Fresh water

EC10 11,5 mg/l (Chlorella vulgaris (freshwater algae); 72 h) (static test; OECD test guideline 201)

Bacteria:

EC50 5.800 mg/l (Paramecium caudatum; 4 h) (static test; no guideline applied)

Ingredient butanone CAS-No. 78-93-3

Fish:

LC50 2.993 mg/l (Pimephales promelas; 96 h) (static test; OECD test guideline 203)

Toxicity to daphnia and other aquatic invertebrates:

EC50 308 mg/l (Daphnia magna; 48 h) (static test; OECD test guideline 202)

Algae:

EC50 1.972 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (static test; endpoint: growth rate; OECD test guideline 201)

Bacteria:

EC50 1.150 mg/l (Pseudomonas putida; 16 h) (static test; DIN 38412)

Ingredient propan-2-ol CAS-No. 67-63-0

Fish:

LC50 9.640 mg/l (Pimephales promelas; 96 h) (flow-through test; OECD test guideline 203)

Toxicity to daphnia and other aquatic invertebrates:

EC50 9.714 mg/l (Daphnia magna; 24 h) (static test; OECD test guideline 202)

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Algae:

EC50 > 100 mg/l (Scenedesmus subspicatus; 72 h)

LOEC 1.000 mg/l (algae; 8 d)

Bacteria:

EC50 > 100 mg/l (bacteria) no harmful effect

12.2. Persistence and degradability

Readily and rapidly degradable: all individual organic substances contained in the product achieve values of at least 60% BOD/CSB or 70% DOC reduction in the readily degradable test (e.g. OECD 301 A-F)

(Limit values of the classification 'readily degradable': $\geq 70\%$ DOC removal or $\geq 60\%$ BOD/CSB in 28 days). readily biodegradable

12.3. Bioaccumulative potential: Accumulation in organisms is not to be expected.

12.4. Mobility in Soli: Accumulation in organisms is not to be expected.

12.5. Results of PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6. Endocrine disrupting properties: No further relevant information available.

12.7. Other adverse effects

Additional ecological information:

Water hazard class 1: slightly hazardous to water Do not allow undiluted product or large quantities of it to enter groundwater, watercourses or drains. into the sewage system.

13. Disposal considerations

13.1. Waste treatment methods

- Product** : Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services. This product shall be disposed of or recovered in compliance with Directive 2008/98/EC on waste as lastly amended.
- Contaminated Packaging** : Container must be completely emptied and must not be opened by force. Hand over to authorized disposal agency. Dispose of it in accordance with local regulations.
- European Waste Catalogue Number** : EAV: 15 01 10 term: Iron-metal containers with a contaminated rest of the contents

14. Transport information

14.1. UN number or ID number

1950

14.2. UN proper shipping name

ADR DRUCKGASPACKUNGEN entzündbar
RID DRUCKGASPACKUNGEN entzündbar
IMDG Aerosols (Limited Quantities Only) (package ≤ 30 kg)
ICAO-TI und IATA-DGR Aerosols, flammable

14.3. Transport hazard class(es)

ADR-Class : 2
shipment category : 2
(Labels; Classification Code; Hazard : 2.1; 5F; D
Identification Number; Tunnel restriction code)
Labelling of the Package : UN 1950 AEROSOLE
Limited Quantities Only (LQ) : 1L (Package ≤ 30 kg)
RID-Class : 2.1; 5F
Labels; Classification Code; Hazard :
Identification Number)
Labelling of the Package : UN 1950 AEROSOLE
Limited Quantities Only (LQ) : 1L (Package ≤ 30 kg)
IMDG-Class : 2.1
(Labels; EmS) : F-D, S-U
Limited Quantities Only (LQ) : 1L (Package ≤ 30 kg)
ICAO-TI und IATA-DGR : 2.1 Flammable gas
Labelling of the Package : UN 1950 AEROSOLE

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14.4. Packaging group

ADR : --
RID : --
IMDG : --
IATA : --

14.5. Environmental hazards

Environmentally hazardous according to ADR : no
Environmentally hazardous according to RID : no
Marine Pollutant according to IMDG-Code : no

14.6. Special precautions for user

Not applicable.

14.7. Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

15. Regulatory information

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

Data for the product

Other regulations: Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG). Take note of the national regulations on the protection of young people at work.

Labelling according to Regulation (EC) No 1272/2008

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

National regulations

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

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

16. Other information

Full text of H-Statements referred to under sections 2 and 3.

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.

Department issuing data specification sheet:

Contact: Technische Chemie GmbH & Co. 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

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.