

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**
**1.1 Product identifier**

**Protho Clean**  
**Article number: 554220**  
**UFI: 78WG-1K9m-G109-V862**

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

Cleaning agent

**1.2.2 Uses advised against**

None known.

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

**Company** Hager & Werken GmbH & Co. KG  
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**Safety Data Sheet** [sdb@chemiebuero.de](mailto:sdb@chemiebuero.de)

**1.4 Emergency telephone number**

**Advisory body** +49 (0) 551-19240 Giftinformationszentrum-Nord

**SECTION 2: Hazards identification**
**2.1 Classification of the substance or mixture [REGULATION (EC) No 1272/2008]**

Aerosol 1: H222 Extremely flammable aerosol. H229 Pressurised container: May burst if heated.

**2.2 Label elements**

The product is required to be labelled in accordance with regulation (EC) No 1272/2008 (CLP).

**Hazard pictograms**

**Signal word**

DANGER

**Hazard statements**

H222 Extremely flammable aerosol.  
 H229 Pressurised container: May burst if heated.

**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.  
 P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C / 122°F.  
 P501 Dispose of contents/container in accordance with local/national regulation.

**Special labelling**

Contains: Mentha arvensis, Extract. EUH208 May produce an allergic reaction.

**Cleaner, 648/2004/CE, contains:**

> 30% aliphatic hydrocarbons  
 fragrances LIMONENE  
 fragrances

### 2.3 Other hazards

<b>Environmental hazards</b>	Does not contain any PBT or vPvB substances. Contains no ingredients with endocrine-disrupting properties.
<b>Other hazards</b>	Further hazards were not determined with the current level of knowledge.

## SECTION 3: Composition / Information on ingredients

### 3.1 Substances

not applicable

### 3.2 Mixtures

The product is a mixture.

Range [%]	Substance
50 - <70	Butane CAS: 106-97-8, EINECS/ELINCS: 203-448-7, EU-INDEX: 601-004-00-0, Reg-No.: 01-2119474691-32-XXXX GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280
20 - <30	Propane CAS: 74-98-6, EINECS/ELINCS: 200-827-9, EU-INDEX: 601-003-00-5, Reg-No.: 01-2119486944-21-XXXX GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280
1 - <5	iso-Butane CAS: 75-28-5, EINECS/ELINCS: 200-857-2, EU-INDEX: 601-004-00-0, Reg-No.: 01-2119485395-27-XXXX GHS/CLP: Flam. Gas 1: H220 - Press. Gas: H280
1 - <2,5	Pentane CAS: 109-66-0, EINECS/ELINCS: 203-692-4, EU-INDEX: 601-006-00-1, Reg-No.: 01-2119459286-30-XXXX GHS/CLP: Flam. Liq. 2: H225 - Asp. Tox. 1: H304 - STOT SE 3: H336 - Aquatic Chronic 2: H411
0,1 - <0,5	Mentha arvensis, Extract CAS: 90063-97-1, EINECS/ELINCS: 290-058-5 GHS/CLP: Skin Irrit. 2: H315 - Eye Irrit. 2: H319 - Skin Sens. 1B: H317 - Aquatic Chronic 2: H411

**Comment on component parts** Substances of Very High Concern - SVHC: substances are not contained or are below 0.1%.  
For full text of H-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

<b>General information</b>	Take off contaminated clothing and wash before reuse.
<b>Inhalation</b>	Ensure supply of fresh air. In the event of symptoms seek medical treatment.
<b>Skin contact</b>	When in contact with the skin, clean with soap and water. Consult a doctor if skin irritation persists.
<b>Eye contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Seek medical advice immediately. Do not induce vomiting. Rinse out mouth and give plenty of water to drink.

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

Drowsiness  
Vertigo  
Nausea, vomiting.  
Allergic reactions

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

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing media** Alcohol-resistant foam.  
Dry powder.  
Water spray jet.  
Carbon dioxide.

**Extinguishing media that must not be used** Full water jet.

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

risk of formation of toxic pyrolysis products, carbon monoxide (CO), not combusted hydrocarbons

### 5.3 Advice for firefighters

Use self-contained breathing apparatus.

Fire residues and contaminated firefighting water must be disposed of in accordance with the local regulations.

Cool containers at risk with water spray jet.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Keep away from all sources of ignition.

Ensure adequate ventilation.

High risk of slipping due to leakage/spillage of product.

Use personal protective equipment (protective gloves, safety glasses, protective clothing).

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

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

Take up with absorbent material (e.g. general-purpose binder).

Dispose of absorbed material in accordance with the regulations.

### 6.4 Reference to other sections

See SECTION 8+13

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Use only in well-ventilated areas.

Vapours can form an explosive mixture with air.

Keep away from all sources of ignition - Refrain from smoking.

Take precautionary measures against static discharges.

Ignitable mixtures can be formed in the empty container.

Do not eat, drink, smoke or take drugs at work.

Wash hands before breaks and after work.

Use barrier skin cream.

Take off contaminated clothing and wash before reuse.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep only in original container.

Prevent penetration into the ground.

Do not store together with oxidizing agents.

Keep container in a well-ventilated place.

Keep container tightly closed.

Protect from heat/overheating and from sun.

Keep in a cool place.

## 7.3 Specific end use(s)

See product use, SECTION 1.2

**SECTION 8: Exposure controls / personal protection**

## 8.1 Control parameters

**Ingredients with occupational exposure limits to be monitored (GB)**

Substance
Butane
CAS: 106-97-8, EINECS/ELINCS: 203-448-7, EU-INDEX: 601-004-00-0, Reg-No.: 01-2119474691-32-XXXX
Long-term exposure: 600 ppm, 1450 mg/m <sup>3</sup>
Short-term exposure (15-minute): 750 ppm, 1810 mg/m <sup>3</sup>
iso-Butane
CAS: 75-28-5, EINECS/ELINCS: 200-857-2, EU-INDEX: 601-004-00-0, Reg-No.: 01-2119485395-27-XXXX
Long-term exposure: 600 ppm, 1450 mg/m <sup>3</sup> , (Butane)
Short-term exposure (15-minute): 750 ppm, 1810 mg/m <sup>3</sup>
Pentane
CAS: 109-66-0, EINECS/ELINCS: 203-692-4, EU-INDEX: 601-006-00-1, Reg-No.: 01-2119459286-30-XXXX
Long-term exposure: 600 ppm, 1800 mg/m <sup>3</sup>

**Ingredients with occupational exposure limits to be monitored (EU)**

Substance / EC LIMIT VALUES
Pentane
CAS: 109-66-0, EINECS/ELINCS: 203-692-4, EU-INDEX: 601-006-00-1, Reg-No.: 01-2119459286-30-XXXX
Eight hours: 1000 ppm, 3000 mg/m <sup>3</sup>

**DNEL**

Substance
Pentane, CAS: 109-66-0
Industrial, dermal, Long-term - systemic effects, 432 mg/kg bw/day
Industrial, inhalative, Long-term - systemic effects, 3000 mg/m <sup>3</sup>
general population, oral, Long-term - systemic effects, 214 mg/kg bw/day
general population, inhalative, Long-term - systemic effects, 643 mg/m <sup>3</sup>
general population, dermal, Long-term - systemic effects, 214 mg/kg bw/day

**PNEC**

Substance
Pentane, CAS: 109-66-0
soil, 0,55 mg/kg soil dw
sewage treatment plants (STP), 3,6 mg/L
sediment (seawater), 1,2 mg/kg sediment dw
sediment (freshwater), 1,2 mg/kg sediment dw
seawater, 230 µg/L
freshwater, 230 µg/L

## 8.2 Exposure controls

<b>Additional advice on system design</b>	Ensure adequate ventilation on workstation. Measurement methods for taking workplace measurements must meet the performance requirements of DIN EN 482. For example, recommendations are given in the IFA's list of hazardous substances.
<b>Eye protection</b>	Safety glasses. (EN 166:2001)
<b>Hand protection</b>	In full contact: 0,7 mm Butyl rubber, >480 min (EN 374-1/-2/-3). The details concerned are recommendations. Please contact the glove supplier for further information.
<b>Skin protection</b>	Protective clothing (EN 340)
<b>Other</b>	Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Personal protective equipment should be selected specifically for the working place, depending on concentration and quantity handled. The resistance of this equipment to chemicals should be ascertained with the respective supplier.
<b>Respiratory protection</b>	In the event of occupational exposure limits being exceeded or of inadequate ventilation: wear appropriate respiratory protection. Short term: filter apparatus, filter A. (DIN EN 14387)
<b>Thermal hazards</b>	not applicable
<b>Delimitation and monitoring of the environmental exposition</b>	Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<b>Physical state</b>	liquid
<b>Color</b>	colourless
<b>Odor</b>	characteristic
<b>Odour threshold</b>	not determined
<b>pH-value</b>	not applicable
<b>pH-value [1%]</b>	not applicable
<b>Boiling point [°C]</b>	not determined
<b>Flash point [°C]</b>	not determined
<b>Flammability (solid, gas) [°C]</b>	not applicable
<b>Lower explosion limit</b>	not applicable
<b>Upper explosion limit</b>	not applicable
<b>Oxidising properties</b>	no
<b>Vapour pressure/gas pressure [kPa]</b>	not applicable
<b>Density [g/cm³]</b>	0,96 - 0,99 (Liquid)
<b>Relative density</b>	not determined
<b>Bulk density [kg/m³]</b>	not applicable
<b>Solubility in water</b>	miscible
<b>Solubility other solvents</b>	No information available.
<b>Partition coefficient [n-octanol/water]</b>	not determined
<b>Kinematic viscosity</b>	not determined
<b>Relative vapour density</b>	not applicable
<b>Evaporation speed</b>	not applicable
<b>Melting point [°C]</b>	not determined
<b>Auto-ignition temperature</b>	not determined
<b>Decomposition temperature [°C]</b>	not applicable
<b>Particle characteristics</b>	No information available.

## 9.2 Other information

Refractive index: 1,4 - 1,5

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No dangerous reactions known if used as directed.

### 10.2 Chemical stability

Stable under normal ambient conditions (ambient temperature).

### 10.3 Possibility of hazardous reactions

Reactions with oxidizing agents.

### 10.4 Conditions to avoid

Strong heating.

### 10.5 Incompatible materials

Oxidizing agent

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

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

Substance
Pentane, CAS: 109-66-0
LD50, oral, Rat, > 2000 mg/kg

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

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

Substance
Butane, CAS: 106-97-8
LC50, inhalative, Rat, 658 mg/L (IUCLID)
Propane, CAS: 74-98-6
LC50, inhalative, Rat, > 1443 mg/l (15 min) (Lit.)
Pentane, CAS: 109-66-0
LC50, inhalative, Rat, 25.3 mg/L(4h)

**Serious eye damage/irritation** Based on available data, the classification criteria are not met.

**Skin corrosion/irritation** Based on available data, the classification criteria are not met.

**Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.  
May cause an allergic skin reaction.

**Specific target organ toxicity — single exposure** Based on available data, the classification criteria are not met.

**Specific target organ toxicity — repeated exposure** Based on available data, the classification criteria are not met.

Substance
Propane, CAS: 74-98-6
NOAEC, inhalative, Rat, 4437 mg/m <sup>3</sup>

**Mutagenicity** Does not contain a relevant substance that meets the classification criteria.

**Reproduction toxicity** Does not contain a relevant substance that meets the classification criteria.

**Carcinogenicity** Does not contain a relevant substance that meets the classification criteria.

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

**General remarks**

Toxicological data of complete product are not available.  
The toxicity data listed pertaining to the ingredients are intended for those working in the medicinal professions, experts for occupational health and safety and toxicologists. The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

## SECTION 12: Ecological information

### 12.1 Toxicity

Substance
Pentane, CAS: 109-66-0
EL50, (72h), Algae, 20.33 mg/
EL50, (48h), Invertebrates, 48.11 mg/L
LL50, (96h), fish, 27.55 mg/L

## 12.2 Persistence and degradability

<b>Behaviour in environment compartments</b>	not determined
<b>Behaviour in sewage plant</b>	Contain no organic complexing agents, which do not reach a DOC-elimination grade in appendix 49 after 28d of at least 80% (in accordance to no. 406 of the plant "analysis and measuring procedure"). AOX-advice: No dangerous components.
<b>Biological degradability</b>	not determined

## 12.3 Bioaccumulative potential

Accumulation in organisms is not expected.

## 12.4 Mobility in soil

Spillages may penetrate the soil causing ground water contamination.

## 12.5 Results of PBT and vPvB assessment

Based on all available information not to be classified as PBT or vPvB respectively.

## 12.6 Endocrine disrupting properties

Contains no ingredients with endocrine-disrupting properties.

## 12.7 Other adverse effects

Ecological data of complete product are not available.

The toxicity data pertaining to the ingredients were supplied by the manufacturers of raw materials.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. It is not possible to determine a waste code for this product in accordance with the European Waste Catalogue (EWC) since it is only possible to classify it according to how it is used by the customer. The waste code is to be determined within the EU in liaison with the waste-disposal operator.

#### Product

Dispose of as hazardous waste.

#### Waste no. (recommended)

160504\* gases in pressure containers (including halons) containing dangerous substances

#### Contaminated packaging

Uncontaminated packaging may be taken for recycling.

#### Waste no. (recommended)

150110\* packaging containing residues of or contaminated by hazardous substances

## SECTION 14: Transport information

### 14.1 UN number or ID number

**Transport by land according to ADR/RID** 1950


**Inland navigation (ADN)** 1950


**Marine transport in accordance with IMDG** 1950


**Air transport in accordance with IATA** 1950




**14.2 UN proper shipping name**

Transport by land according to ADR/RID	Aerosols
- Classification Code	5F
- Label	
- ADR LQ	1 l
- ADR 1.1.3.6 (8.6)	Transport category (tunnel restriction code) 2 (D)

Inland navigation (ADN)	Aerosols
- Classification Code	5F
- Label	

Marine transport in accordance with IMDG	Aerosols
- EMS	F-D, S-U
- Label	
- IMDG LQ	1 l

Air transport in accordance with IATA	Aerosols, flammable
- Label	

**14.3 Transport hazard class(es)**

Transport by land according to ADR/RID	2
Inland navigation (ADN)	2
Marine transport in accordance with IMDG	2.1
Air transport in accordance with IATA	2.1

**14.4 Packing group**

Transport by land according to ADR/RID	not applicable
Inland navigation (ADN)	not applicable
Marine transport in accordance with IMDG	not applicable
Air transport in accordance with IATA	not applicable

**14.5 Environmental hazards**

Transport by land according to ADR/RID no

Inland navigation (ADN) no

Marine transport in accordance with IMDG no

Air transport in accordance with IATA no

**14.6 Special precautions for user**

Relevant information under SECTION 6 to 8.

**14.7 Maritime transport in bulk according to IMO instruments**

not applicable

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

<b>EEC-REGULATIONS</b>	2008/98/EC 2000/532/EC; 2010/75/EU; 2004/42/EC; (EC) 648/2004; (EC) 1907/2006 (REACH); (EU) 1272/2008; 75/324/EEC ((EC) 2016/2037); (EU) 2020/878; (EU) 2016/131; (EU) 517/2014
<b>TRANSPORT-REGULATIONS</b>	ADR (2021); IMDG-Code (2021, 40. Amdt.); IATA-DGR (2021)
<b>NATIONAL REGULATIONS (GB):</b>	EH40/2005 Workplace exposure limits (Second edition, published December 2011).
- Observe employment restrictions for people	Observe employment restrictions for young people.
- VOC (2010/75/CE)	92 %

**15.2 Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information****16.1 Hazard statements (SECTION 3)**

H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H315 Causes skin irritation.

H411 Toxic to aquatic life with long lasting effects.  
H336 May cause drowsiness or dizziness.  
H304 May be fatal if swallowed and enters airways.  
H225 Highly flammable liquid and vapour.  
H280 Contains gas under pressure; may explode if heated.  
H220 Extremely flammable gas.

**16.2 Abbreviations and acronyms:**

ADR = Accord européen relatif au transport international des marchandises Dangereuses par Route  
 RID = Règlement concernant le transport international ferroviaire de marchandises dangereuses  
 ADN = Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure  
 ATE = acute toxicity estimate  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging  
 DMEL = Derived Minimum Effect Level  
 DNEL = Derived No Effect Level  
 EC50 = Median effective concentration  
 ECB = European Chemicals Bureau  
 EEC = European Economic Community  
 EINECS = European Inventory of Existing Commercial Chemical Substances  
 EL50 = Median effective loading  
 ELINCS = European List of Notified Chemical Substances  
 EmS = Emergency Schedules  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC-Code = International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IC50 = Inhibition concentration, 50%  
 IMDG = International Maritime Code for Dangerous Goods  
 IUCLID = International Uniform Chemical Information Database  
 IVIS = In vitro irritation score  
 LC50 = Lethal concentration, 50%  
 LD50 = Median lethal dose  
 LC0 = lethal concentration, 0%  
 LOAEL = lowest-observed-adverse-effect level  
 LL50 = Median lethal loading  
 LQ = Limited Quantities  
 MARPOL = International Convention for the Prevention of Marine Pollution from Ships  
 NOAEL = No Observed Adverse Effect Level  
 NOEC = No Observed Effect Concentration  
 PBT = Persistent, Bioaccumulative and Toxic substance  
 PNEC = Predicted No-Effect Concentration  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals  
 STP = Sewage Treatment Plant  
 TLV@TWA = Threshold limit value – time-weighted average  
 TLV@STEL = Threshold limit value – short-time exposure limit  
 VOC = Volatile Organic Compounds  
 vPvB = very Persistent and very Bioaccumulative

**16.3 Other information****Classification procedure**

Aerosol 1: H222 Extremely flammable aerosol. (Calculation method) H229 Pressurised container: May burst if heated. (Calculation method)

**Modified position**

none

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