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

1.1. Product identifier

PU Cleaner

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

Use of the substance/mixture

Washing and cleaning products (including solvent based products)

1.3. Details of the supplier of the safety data sheet

Company name:	HAGO Chemotechnik GmbH & Co. KG
Street:	Bodenseestr. 217
Place:	D-81243 München
Telephone:	+49 (0)89 897702-0
e-mail:	msds@hago.de
Internet:	www.hago.de

1.4. Emergency telephone number: public emergency number

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

Indications of danger: F+ - Extremely flammable, Xi - Irritant
R phrases:
Extremely flammable.
Irritating to eyes.
Repeated exposure may cause skin dryness or cracking.
Vapours may cause drowsiness and dizziness.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Hazard categories:
Aerosol: Aerosol 1
Serious eye damage/eye irritation: Eye Irrit. 2
Specific target organ toxicity - single exposure: STOT SE 3
Hazard Statements:
Extremely flammable aerosol.
Pressurised container: May burst if heated.
Causes serious eye irritation.
May cause drowsiness or dizziness.

2.2. Label elements

Hazardous components which must be listed on the label

acetone; propan-2-one; propanone
propan-2-ol; isopropyl alcohol; isopropanol

Signal word: Danger

Pictograms: GHS02-GHS07

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

P102	Keep out of reach of children.
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.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Special labelling of certain mixtures

EUH066	Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
200-662-2	acetone; propan-2-one; propanone	25 - < 50 %
67-64-1	F - Highly flammable, Xi - Irritant R11-36-66-67	
606-001-00-8	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066	
200-661-7	propan-2-ol; isopropyl alcohol; isopropanol	25 - < 50 %
67-63-0	F - Highly flammable, Xi - Irritant R11-36-67	
603-117-00-0	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336	
204-065-8	dimethyl ether	10 - < 25 %
115-10-6	F+ - Extremely flammable R12	
603-019-00-8	Flam. Gas 1; H220	
01-2119472128-37		
200-857-2	isobutane	10 - < 25 %
75-28-5	F+ - Extremely flammable R12	
601-004-00-0	Flam. Gas 1; H220	
200-827-9	propane	2.5 - < 10 %
74-98-6	F+ - Extremely flammable R12	
601-003-00-5	Flam. Gas 1; H220	

Full text of R-, H- and EUH-phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Move victim out of danger zone. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After inhalation

Provide fresh air. In case of irregular breathing or respiratory arrest provide artificial respiration.

After contact with skin

After contact with skin, wash immediately with plenty of water and soap. In case of skin irritation, seek medical treatment.

After contact with eyes

In case of contact with eyes, rinse immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Subsequently consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Call a physician immediately. Have victim drink large quantities of water, with active charcoal if possible.

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

Headache. Dizziness. Nausea. Has degreasing effect on the skin. Made worse through the drinking of alcohol beverages.

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

First Aid, decontamination, treatment of symptoms.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO_2), Foam, Extinguishing powder

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon dioxide (CO_2), Carbon monoxide.
Vapours may form explosive mixtures with air.

5.3. Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Remove all sources of ignition.
Avoid contact with skin, eyes and clothes. Do not breathe vapour/aerosol.

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

6.3. Methods and material for containment and cleaning up

Provide adequate ventilation. Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Treat the recovered material as prescribed in the section on waste disposal.
Handling, Personal protection equipment: See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Provide adequate ventilation as well as local exhaustion at critical locations. Do not use in enclosed rooms.

Advice on protection against fire and explosion

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking. Keep out of the reach of children.
Vapours can form explosive mixtures with air. Take precautionary measures against static discharge.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep in a cool, well-ventilated place.

Advice on storage compatibility

Do not store together with: Oxidising agent

Further information on storage conditions

Protect from sunlight. Do no expose to temperatures exceeding 50°C/122°F.

7.3. Specific end use(s)

not applicable

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m³	fibres/ml	Category	Origin
67-64-1	Acetone	500	1210		TWA (8 h)	WEL
		1500	3620		STEL (15 min)	WEL
115-10-6	Dimethyl ether	400	766		TWA (8 h)	WEL
		500	958		STEL (15 min)	WEL
67-63-0	Propan-2-ol	400	999		TWA (8 h)	WEL
		500	1250		STEL (15 min)	WEL

8.2. Exposure controls

Appropriate engineering controls

Personal protective equipment has to be chosen in accordance with workplace specific conditions, e. g. concentration of the product. Chemical resistance has to be clarified with the supplier of protective equipment.

Protective and hygiene measures

Wash hands before breaks and after work. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately.

Eye/face protection

Tightly sealed safety glasses.

Hand protection

Tested protective gloves are to be worn: NBR (Nitrile rubber). FKM (fluororubber). The quality of the

protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Skin protection

Protective clothing: Solvent-proof.

Respiratory protection

Respiratory protection necessary at: insufficient ventilation.
Suitable respiratory protective equipment: gas filtering equipment (EN 141).

Environmental exposure controls

See chapter 7. No additional measures necessary.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Aerosol
Colour:	colourless
Odour:	characteristic

		Test method
pH-Value:	not determined	
Changes in the physical state		
Melting point:	not applicable	
Initial boiling point and boiling range:	not applicable	
Flash point:	not determined	

Explosive properties

not explosive. In use, may form flammable/explosive vapour-air mixture.

Lower explosion limits:	1,5 vol. %	
Upper explosion limits:	14,3 vol. %	
Ignition temperature:	460 °C	
Vapour pressure: (at 20 °C)	2500 - 2900 hPa	
Density:	0,74 - 0,76 g/cm³	
Water solubility:	partially miscible	
Viscosity / dynamic:	not determined	
Viscosity / kinematic:	not determined	
Vapour density:	not determined	
Evaporation rate:	not determined	

9.2. Other information

none

SECTION 10: Stability and reactivity

10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Oxidising agent, strong

10.4. Conditions to avoid

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

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

Carbon dioxide (CO_2), Carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicocinetics, metabolism and distribution

There are no data available on the mixture itself.

Acute toxicity

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

Acute toxicity

CAS No	Chemical name				
	Exposure routes	Method	Dose	Species	Source
67-64-1	acetone; propan-2-one; propanone				
	oral	LD50	5800 mg/kg	Rat	RTECS
	dermal	LD50	20000 mg/kg	Rabbit	IUCLID
	inhalative (4 h) vapour	LC50	76 mg/l	Rat	
115-10-6	dimethyl ether				
	inhalative (4 h) gas	LC50	309 ppm	Rat	

Irritation and corrosivity

Causes serious eye irritation.

Sensitising effects

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

STOT-single exposure

May cause drowsiness or dizziness. (acetone; propan-2-one; propanone), (propan-2-ol; isopropyl alcohol; isopropanol)

Severe effects after repeated or prolonged exposure

Repeated exposure may cause skin dryness or cracking.

Carcinogenic/mutagenic/toxic effects for reproduction

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

Aspiration hazard

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

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] | [d]	Species	Source
67-64-1	acetone; propan-2-one; propanone					
	Acute fish toxicity	LC50	5540 mg/l	96 h	Onchorhynchus mykiss	
	Acute crustacea toxicity	EC50	6100 mg/l	48 h	Daphnia magna	
115-10-6	dimethyl ether					
	Acute fish toxicity	LC50	> 4,1 mg/l	96 h	Poecilia reticulata (Guppy)	
	Acute algae toxicity	ErC50	154,9 mg/l	96 h		
	Acute crustacea toxicity	EC50	> 4,4 mg/l	48 h	Daphnia magna (Big water flea)	

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
67-64-1	acetone; propan-2-one; propanone	-0,24
115-10-6	dimethyl ether	0,1
75-28-5	isobutane	2,8
74-98-6	propane	2,36

12.4. Mobility in soil

If product enters soil, it will be mobile and may contaminate groundwater.

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects

There are no data available on the mixture itself.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing dangerous substances Classified as hazardous waste.

Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances Classified as hazardous waste.

Contaminated packaging

Dispose of waste according to applicable legislation.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2

14.4. Packing group: -

Hazard label: 2.1

Classification code: 5F
Limited quantity: 1 L
Transport category: 2
Tunnel restriction code: D

Other applicable information (land transport)

Transport as "limited quantity" according to chapter 3.4 ADR/RID.

Inland waterways transport (ADN)

14.1. UN number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2

14.4. Packing group: -

Hazard label: 2.1

Classification code: 5F
Limited quantity: 1 L

Marine transport (IMDG)

14.1. UN number: UN 1950

14.2. UN proper shipping name: AEROSOLS

14.3. Transport hazard class(es): 2.1

14.4. Packing group: -

Hazard label: 2.1

Marine pollutant: -
Limited quantity: 1000 mL
EmS: F-D, S-U

Air transport (ICAO)

14.1. UN number: UN 1950

14.2. UN proper shipping name: AEROSOLS, flammable

14.3. Transport hazard class(es): 2.1

14.4. Packing group: -

Hazard label: 2.1

Limited quantity Passenger: 30 kg G

Other applicable information (air transport)

E0

Passenger-LQ: Y203

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

see chapter 6 - 8

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not relevant

SECTION 15: Regulatory information

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

EU regulatory information

2004/42/EC (VOC): 100 %

National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment

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

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 3,4,7,8,9,10,11,12,13,14,15.

Relevant R-phrases (Number and full text)

11	Highly flammable.
12	Extremely flammable.
36	Irritating to eyes.
66	Repeated exposure may cause skin dryness or cracking.
67	Vapours may cause drowsiness and dizziness.

Relevant H- and EUH-phrases (Number and full text)

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.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

Data sources: Data arise from reference works and literature.

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)