Safety data sheet
according to 1907/2006/EC, Article 31

PERGAN
The Peroxide Company

Printing date 27.09.2019 Version: 5 Revision: 31.01.2018

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

· **1.1 Product identifier**

· **Trade name:** PERGASLOW HD-10

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture**
Inhibitor
For industrial use

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

· **Manufacturer/Supplier:**
PERGAN GmbH
Hilfsstoffe für industrielle Prozesse
Schlavenhorst 71
D-46395 Bocholt
Tel: +49 2871 9902-0
Fax: +49 2871 9902-50

· **Further information obtainable from:**
Environment protection / Security of labour
Competent person:
* Sales Manager Germany: Mr. Ansgar Pappenheim, e-mail: a.pappenheim@pergan.com
* Export Sales Manager: Mr. Dr. Thomas Philipps, e-mail: dr.philipps@pergan.com
* Environment protection / Security of labour: Mr. Christoph Wilting, e-mail: c.wilting@pergan.com

· **1.4 Emergency telephone number:**
- Tel: +49 2871 9902-0

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

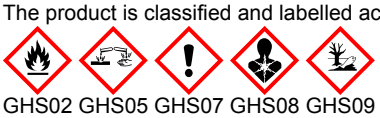
· **Classification according to Regulation (EC) No 1272/2008**

Flam. Liq. 3	H226	Flammable liquid and vapour.
Acute Tox. 4	H302	Harmful if swallowed.
Acute Tox. 4	H312	Harmful in contact with skin.
Acute Tox. 4	H332	Harmful if inhaled.
Skin Irrit. 2	H315	Causes skin irritation.
Eye Dam. 1	H318	Causes serious eye damage.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Muta. 2	H341	Suspected of causing genetic defects.
Carc. 2	H351	Suspected of causing cancer.
Aquatic Acute 1	H400	Very toxic to aquatic life.
Aquatic Chronic 2	H411	Toxic to aquatic life with long lasting effects.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS02 GHS05 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**
cyclohexanone
1,4-dihydroxybenzene

· **Hazard statements**

H226	Flammable liquid and vapour.
H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H410	Very toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243	Take precautionary measures against static discharge.
P264	Wash thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	IF ON SKIN (or hair): 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.

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P310	Immediately call a POISON CENTER/doctor.
P330	Rinse mouth.
P362+P364	Take off contaminated clothing and wash it before reuse.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**

· **Dangerous components:**

CAS: 108-94-1 EINECS: 203-631-1 Index number: 606-010-00-7 Reg-No.: 01-2119453616-35	cyclohexanone Flam. Liq. 3, H226; Eye Dam. 1, H318; Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315	80-90%
CAS: 123-31-9 EINECS: 204-617-8 Index number: 604-005-00-4 Reg-No.: 01-2119524016-51	1,4-dihydroxybenzene Muta. 2, H341; Carc. 2, H351; Eye Dam. 1, H318; Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=1); Acute Tox. 4, H302; Skin Sens. 1, H317	10-20%

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information:** Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Take care of personal protection for the first aider.

· **After inhalation:** Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
Take affected persons into fresh air and keep quiet.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
Immediately remove contaminated clothing.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed** No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents:** CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **5.2 Special hazards arising from the substance or mixture** Under certain fire conditions, traces of other toxic gases cannot be excluded.
· **5.3 Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.
Do not inhale explosion gases or combustion gases.
· **Additional information** Cool endangered receptacles with water spray.
Self-protection first!

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SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**
Keep away from ignition sources.
Wear protective equipment. Keep unprotected persons away.

· **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.


Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Soak up with absorbant material (e. g. Vermiculit) and dispose of in accordance with government regulations.

· **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
In case of large spillage the environmental authority should be informed.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
Use only in well ventilated areas.
Before break and at the end of work hands should be thoroughly washed.
While using do not eat, drink or smoke.
Do not generate flames or sparks.
Keep product and emptied container away from heat and sources of ignition.
Take precautionary measures against static discharges.


Do not smoke.

· **Information about fire - and explosion protection:**
Protect against electrostatic charges.
Use explosion-proof apparatus / fittings and spark-proof tools.
Highly volatile, flammable constituents are released during processing.
Fumes can combine with air to form an explosive mixture.


Wear shoes with conductive soles.

Formation of flammable or explosive gas/air-mixtures is possible.


Avoid open flames, sparks, direct sunlight and other sources of ignition.

Keep ignition sources away - Do not smoke.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage:**
Pay attention to the special requirements of your local autorithies for storing dangerous goods.
· **Requirements to be met by storerooms and receptacles:**
Prevent any seepage into the ground.
Use only receptacles specifically permitted for this substance/product.
· **Information about storage in one common storage facility:**
Store away from foodstuffs, drinks and feeding stuffs.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store receptacle in a well ventilated area.
Protect from contamination.
Storage in a collecting room is required.
· **Recommended storage temperature (To maintain quality):**
0 .... +30 °C

· **7.3 Specific end use(s)**
No further relevant information available.

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SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**	
108-94-1 cyclohexanone	
WEL (Great Britain)	Short-term value: 82 mg/m³, 20 ppm Long-term value: 41 mg/m³, 10 ppm Sk, BMGV
IOELV (EU)	Short-term value: 81.6 mg/m³, 20 ppm Long-term value: 40.8 mg/m³, 10 ppm Skin
123-31-9 1,4-dihydroxybenzene	
WEL (Great Britain)	Long-term value: 0.5 mg/m³

· **DNELs**		
108-94-1 cyclohexanone		
Dermal	DNEL Longterm System	4 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	40 mg/m3 (Worker)
123-31-9 1,4-dihydroxybenzene		
Dermal	DNEL Longterm System	3.33 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	2.1 mg/m3 (Worker)

· **PNECs**	
108-94-1 cyclohexanone	
PNEC Marinewater sed	0.017 mg/kg sed dw (-)
PNEC Freshwater	0.033 mg/l (AF 1.000)
PNEC Freshwater sed	0.168 mg/kg sed dw (-)
PNEC Soil	0.014 mg/kg soil dw (-)
PNEC STP	10 mg/l (AF 100)
PNEC Marinewater	0.003 mg/l (AF 10.000)
123-31-9 1,4-dihydroxybenzene	
PNEC Marinewater sed	0.00049 mg/kg sed dw (-)
PNEC Freshwater	0.00057 mg/l (AF 10)
PNEC Freshwater sed	0.0049 mg/kg sed dw (-)
PNEC Soil	0.00064 mg/kg soil dw (-)
PNEC STP	0.71 mg/l (AF 100)
PNEC Marinewater	0.000057 mg/l (AF 100)

· **Ingredients with biological limit values:**	
108-94-1 cyclohexanone	
BMGV (Great Britain)	2 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: cyclohexanol

· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid close or long term contact with the skin.
Avoid contact with the eyes.
Do not eat, drink, smoke or sniff while working.
Use skin protection cream for skin protection.
Be sure to clean skin thoroughly after work and before breaks.

· **Respiratory protection:** In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.

Filter A2

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· **Protection of hands:** Only use chemical-protective gloves with CE-labelling of category III.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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.
Butyl rubber, BR
Fluorocarbon rubber (Viton)
Nitrile rubber, NBR
Neoprene

· **Penetration time of glove material** The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

Tightly sealed goggles

· **Body protection:**

Protective work clothing

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
· **Form:**	Fluid
· **Colour:**	Colourless
· **Odour:**	Characteristic
· **Odour threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
· **Melting point/freezing point:**	Undetermined.
· **Initial boiling point and boiling range:**	Not applicable.
· **Flash point:**	43 °C
· **Flammability (solid, gas):**	Not applicable.
· **Decomposition temperature:**	Not determined.
· **Auto-ignition temperature:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· **Explosion limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapour pressure:**	Not determined.
· **Density at 20 °C:**	0.97 g/cm³
· **Relative density**	Not determined.
· **Vapour density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
· **water:**	Undetermined.
· **Partition coefficient: n-octanol/water:**	not determined
· **Viscosity:**	
· **Dynamic:**	Not determined.
· **Kinematic:**	Not determined.
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known.
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.

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· **10.6 Hazardous decomposition products:** No hazardous decomposition products if used and stored according to specifications.
· **Additional information:** Emergency procedures will vary depending on conditions. The customer should have an emergency response plane in place.

SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity** Harmful if swallowed, in contact with skin or if inhaled.

· **LD/LC50 values relevant for classification:**		
108-94-1 cyclohexanone		
Oral	LD50	1,620 mg/kg (rattus)
Dermal	LD50	1,100 mg/kg (cuniculosus)
Inhalative	LC50 / 4h	11 mg/l (rattus)
123-31-9 1,4-dihydroxybenzene		
Oral	LD50	302 mg/kg (rattus)
	LDLo	29 mg/kg (homo)

· **Primary irritant effect:**
· **Skin corrosion/irritation** Causes skin irritation.
· **Serious eye damage/irritation** Causes serious eye damage.
· **Respiratory or skin sensitisation** May cause an allergic skin reaction.
· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **Germ cell mutagenicity** Suspected of causing genetic defects.
· **Carcinogenicity** Suspected of causing cancer.
· **Reproductive toxicity** Based on available data, the classification criteria are not met.
· **STOT-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** 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**

· **Aquatic toxicity:**	
108-94-1 cyclohexanone	
LC50 / 96h	527-732 mg/l (pimephales promelas)
123-31-9 1,4-dihydroxybenzene	
LC50 / 96h	0.044 mg/l (pimephales promelas)
EC50 / 48h	0.29 mg/l (daphnia magna)
IC50 / 72h	0.335 mg/l (selenastrum capricornutum)

· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Very toxic for fish
· **Additional ecological information:**
· **General notes:** Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**  Must not be disposed together with household garbage. Do not allow product to reach sewage system.
· **Waste disposal key:** Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-number.

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· **Uncleaned packaging:**
· **Recommendation:** This material and its container must be disposed of as hazardous waste.

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR, IMDG, IATA**	UN1993
· **14.2 UN proper shipping name**	
· **ADR**	UN1993 FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANONE), ENVIRONMENTALLY HAZARDOUS
· **IMDG**	FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANONE, HYDROQUINONE), MARINE POLLUTANT
· **IATA**	FLAMMABLE LIQUID, N.O.S. (CYCLOHEXANONE)
· **14.3 Transport hazard class(es)**	
· **ADR**	
· **Class**	3 (F1) Flammable liquids.
· **Label**	3
· **IMDG**	
· **Class**	3 Flammable liquids.
· **Label**	3
· **IATA**	
· **Class**	3 Flammable liquids.
· **Label**	3
· **14.4 Packing group**	
· **ADR, IMDG, IATA**	III
· **14.5 Environmental hazards:**	Product contains environmentally hazardous substances: HYDROQUINONE
· **Marine pollutant:**	Yes Symbol (fish and tree)
· **Special marking (ADR):**	Symbol (fish and tree)
· **14.6 Special precautions for user**	Warning: Flammable liquids.
· **Danger code (Kemler):**	30
· **Stowage Category**	A
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **Transport category**	3
· **Tunnel restriction code**	D/E
· **RID / GGVSEB:**	like ADR
· **IMDG**	
· **Limited quantities (LQ)**	5L

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· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

SECTION 15: Regulatory information

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

· **Directive 2012/18/EU**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements**	100 t
· **Qualifying quantity (tonnes) for the application of upper-tier requirements**	200 t
· **REGULATION (EC) No 1907/2006 ANNEX XVII**	Conditions of restriction: 3

· **National regulations:**

· **Other regulations, limitations and prohibitive regulations**
· **Please note:** Take care of the respective local regulations.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**
H226 Flammable liquid and vapour.
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· **Department issuing SDS:** Environment protection / Security of labour
· **Contact:** Tel: +49 2871 9902-0
E-mail: mail@pergan.com

· **Abbreviations and acronyms:**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· *** Data compared to the previous version altered.**