

SAFETY DATA SHEET
according to 1907/2006/EC, Article 31 Revision date: 29.01.2020

1- IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product details

Trade name: HS Hardener LOW VOC slow

Article number: 12284, 12287

Relevant identified uses of the substance or mixture and uses advised against:

No further relevant information available.

Intended use: Car refinishing Product/ Hardening agent/ Curing agent

Manufacturer/Supplier: Chamäleon GmbH

Rudolf-Diesel-Straße, 8a, 69115 Heidelberg -- Germany

Further information obtainable from: Product Safety Department

Information in case of emergency: + 49 70024112112 (CH)

2 – HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Label elements

Labelling according to Regulation (EC) No 1272/2008

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

Hazard pictograms



GHS02

GHS07

Signal word Warning

Hazard-determining components of labelling:

Hexamethylene diisocyanate, oligomers

2-Butoxyethyl acetate

2-Methoxy-1-methylethyl acetate

n-Butyl acetate

Hazard statements

H226 Flammable liquid and vapour.

H332 Harmful if inhaled.

H317 May cause an allergic skin reaction.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/doctor if you feel unwell.

Additional information:

EUH204 Contains isocyanates. May produce an allergic reaction.

Restricted to professional users.

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3- COMPOSITION/INFORMATION ON INGREDIENTS

Chemical characterization: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119485796-17	Hexamethylene diisocyanate, oligomers	50-100%
	Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	
CAS: 112-07-2 EINECS: 203-933-3 Reg.nr.: 01-2119475112-47	2-Butoxyethyl acetate	10-25%
	Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332	
CAS: 108-65-6 EINECS: 203-603-9 Reg.nr.: 01-2119475791-29	2-Methoxy-1-methylethyl acetate	10-25%
	Flam. Liq. 3, H226; STOT SE 3, H336	
CAS: 123-86-4	n-Butyl acetate	5-<10%

EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	Flam. Liq. 3, H226; STOT SE 3, H336	
CAS: 822-06-0 EINECS: 212-485-8 Reg.nr.: 01-2119457571-37	hexamethylene-di-isocyanate Acute Tox. 2, H330; Resp. Sens. 1, H334; Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	≥0.1-<0.5%

Additional information: For the wording of the listed risk phrases refer to section 16.

4- FIRST - AID MEASURE

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.

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

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.

After skin contact: Generally the product does not irritate the skin.

After eye contact: Rinse opened eye for several minutes under running water.

After swallowing: If symptoms persist consult doctor.

Indication of any immediate medical attention and special treatment needed

No further relevant information available

Information for doctor:

5- FIRE - FIGHTING MEASURE

Extinguishing media

Suitable extinguishing agents: CO₂, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents: Water with full jet

Special hazards arising from the substance or mixture

In case of fire, the following can be released:

Nitrogen oxides (NO_x)

Carbon monoxide (CO)

Hydrogen cyanide (HCN)

Advice for firefighters

Protective equipment: Mouth respiratory protective device.

6– ACCIDENTAL RELEASE MEASURE

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

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

Methods and material for containment and cleaning up:

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

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Contain and collect spillages with non-combustible absorbent materials (e.g. sand, earth, diatomaceous earth) and place in a suitable container.

Decontaminate immediately with suitable mixture (flammable):

- as such usable (inflammatory!):

water 45 Vol. %

ethanol or isopropanol 50 Vol. %

ammonia solution (Density= 0.88) 5 Vol. %

- alternatively (non-flammable):

sodium carbonate 5 Vol. %

water 95 Vol. %

Add the same decontaminant to any residues and allow to stand for several days in a non-sealed container until no further reaction occurs. Once this stage is reached, close the container and dispose of in accordance with the waste regulations (see Section 13).

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.

7– HANDLING AND STORAGE

Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Persons with a history of asthma, allergies or chronic or recurrent respiratory diseases should only be employed in processes in which this product is used under appropriate medical supervision.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Do not store together with reducing agents, heavy-metal compounds, acids and alkalis.

Store away from foodstuffs.

Further information about storage conditions:

Keep container tightly sealed.

Store separately from oxidising agents, strongly alkaline and strongly acidic materials, amines, alcohol and water.

Storage class: 3

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

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Control parameters

Ingredients with limit values that require monitoring at the workplace:	
28182-81-2 Hexamethylene diisocyanate, oligomers	
EBW	Short-term value: 0.5 mg/m ³ exposition evaluation valu TRGS 430 (EBW)
112-07-2 2-Butoxyethyl acetate	
WEL	Short-term value: 332 mg/m ³ , 50 ppm Long-term value: 133 mg/m ³ , 20 ppm Sk
108-65-6 2-Methoxy-1-methylethyl acetate	
WEL	Short-term value: 548 mg/m ³ , 100 ppm Long-term value: 274 mg/m ³ , 50 ppm Sk
123-86-4 n-Butyl acetate	
WEL	Short-term value: 966 mg/m ³ , 200 ppm Long-term value: 724 mg/m ³ , 150 ppm
822-06-0 hexamethylene-di-isocyanate	
WEL	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO

Ingredients with biological limit values:	
822-06-0 hexamethylene-di-isocyanate	
BMGV	1 µmol creatinine/mol Medium: urine Sampling time: At the end of the period od exposure Parameter: isocyanate-derived diamine

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

Exposure controls

Personal protective equipment:

All personal protective equipment, including respiratory protective equipment, used to control exposure to hazardous substances must be selected to meet the requirements of the COSHH Regulations.

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.

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.

Filter A/P2 (EN 141, EN 143)

Protection of hands:

Protective gloves (EN 374)

Material of gloves

Butyl rubber, BR

Recommended thickness of the material: ≥ 0.7 mm.

Penetration time of glove material Value for the permeation: Level ≤ 2

Eye protection: Tightly sealed goggles

9 – PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Fluid
Colour:	According to product specification
Odour:	Characteristic
Odour threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	124-128 °C
Flash point:	30 °C (DIN 53213)
Flammability (solid, gas):	Not applicable.
Ignition temperature:	280 °C (DIN 51794)
Decomposition temperature:	Not determined.
Auto-ignition temperature::	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible..
Explosion limits:	
Lower:	1.5 Vol %
Upper:	10.8 Vol %
Vapour pressure at 20 °C:	10.7 hPa

Density at 20 °C:	1.05 g/cm ³ (DIN 53217)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with water: Not miscible or difficult to mix.	
Partition coefficient: n-octanol/water: Not determined.	
Viscosity:	
Dynamic:	Not determined.
Kinematic at 20 °C:	18 s (DIN 53211/4)
Solvent content:	
VOC (EC)	45.89 %
Solids content (weight-%):	54.1 %
Other information	No further relevant information available.

10– STABILITY AND REACTIVITY

Reactivity No further relevant information available.

Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products:

Possible in traces.

Nitrogen oxides

Hydrogen chloride (HCl)

Hydrogen cyanide (prussic acid)

Carbon monoxide

Nitrogen oxides (NO_x)

11– TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity:

Harmful if inhaled.

LD/LC50 values relevant for classification:		
112-07-2 2-Butoxyethyl acetate		
Oral	LD50	1,880 mg/kg (rat)
Dermal	LD50	1,480 mg/kg (rabbit)

Primary irritant effect:

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

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

Respiratory or skin sensitisation

May cause an allergic skin reaction.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

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

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

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

STOT-single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

STOT-repeated exposure Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the

12 – ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Bioaccumulative potential No further relevant information available.

Mobility in soil No further relevant information available.

Additional ecological information:

General notes:

Water hazard class 1 (German Regulation) : slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13– DISPOSAL CONSIDERATION

Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue	
08 01 11*	waste paint and varnish containing organic solvents or other dangerous substances

Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

14- TRANSPORT INFORMATION

UN-Number

ADR, IMDG, IATA

UN1263

UN proper shipping name

ADR

IMDG, IATA

UN1263 PAINT RELATED MATERIAL
PAINT RELATED MATERIAL

Transport hazard class(es)

ADR



Class
Label

3 (F1) Flammable liquids.
3

IMDG, IATA



Class
Label

3 Flammable liquids.
3

Packing group

ADR, IMDG, IATA

III

Environmental hazards:

Marine pollutant:

No

Special precautions for user

Danger code (Kemler):

Warning: Flammable liquids.

30

EMS Number:

F-E,S-E

Stowage Category:

A

**Transport in bulk according to Annex II of
Marpol and the IBC Code**

Not applicable.

Transport/Additional information:

ADR

Transport category

3

Tunnel restriction code

D/E

IMDG

Limited quantities (LQ)

5L

UN "Model Regulation":

UN 1263 PAINT RELATED MATERIAL, 3, III

15 – REGULATORY INFORMATION

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

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

Seveso category P5c FLAMMABLE LIQUIDS

Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000

Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

National regulations:

Class	Share in %
I	<1
NK	25-50

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

16-OTHER INFORMATION

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.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

Classification according to Regulation (EC) No 1272/2008

The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

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)
VOC: Volatile Organic Compounds (USA, EU)
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. 2: Acute toxicity – Category 2
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

The information contained in these sheets is based on the present state of knowledge and current national legislation. It provides guidance on health, safety and environmental aspects and should not be construed as any guarantee of technical performance or suitability for particular applications.