



SAFETY DATA SHEET
according to 1907/2006/EC, Article 31

Revision date: 03.01.2024

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

Product details

Trade name: Hardener fast for LOW VOC clear coat

Article number: 12274, 12277

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



flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



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 GB CLP regulation.

Hazard pictograms



GHS02 GHS07

Signal word Warning

Hazard-determining components of labelling:

Hexamethylene diisocyanate, oligomers

n-Butyl acetate

2-Ethoxy-1-methylethyl acetate

hexamethylene-di-isocyanate

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/hearing protection.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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:

EUH066 Repeated exposure may cause skin dryness or cracking.

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

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 Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335, EUH204	50-100%
CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-Butyl acetate Flam. Liq. 3, H226; STOT SE 3, H336, EUH066	25-50%
CAS: 54839-24-6 EINECS: 259-370-9 Reg.nr.: 01-2119475116-39	2-Ethoxy-1-methylethyl acetate Flam. Liq. 3, H226; STOT SE 3, H336	10-25%
CAS: 77-58-7 EINECS: 201-039-8 Reg.nr.: 01-2119496068-27	dibutyltin dilaurate Muta. 2, H341; Repr. 1B, H360FD; STOT SE 1, H370; STOT RE 1, H372; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Eye Irrit. 2, H319; Skin Sens. 1, H317	≥0.1 - <0.25%
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, EUH204. Specific concentration limits: Resp. Sens. 1; H334: C ≥ 0.5 % Skin Sens. 1; H317: C ≥ 0.5 %	<0.1%

Additional information:

For the wording of the listed hazard phrases refer to section 16.

4- FIRST - AID MEASURE

Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

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: Immediately rinse with water.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: If symptoms persist consult doctor.

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5- FIRE - FIGHTING MEASURE**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

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 section 13.

Ensure adequate ventilation.

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

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)
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
77-58-7 dibutyltin dilaurate	
WEL	Short-term value: 0.2 mg/m ³ Long-term value: 0.1 mg/m ³ as Sn; Sk
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

Appropriate engineering controls: No further data; see section 7.

Individual protection measures, such as 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:

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

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.

Protection of hands:

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

Protective gloves (EN 374)

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye/face protection

Tightly sealed goggles

9 – PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

General Information

Physical state

Fluid

Colour:

According to product specification

Odour:

Characteristic

Odour threshold:

Not determined.

Melting point/freezing point:

Undetermined.

Boiling point or initial boiling point and boiling range:

124-128 °C (123-86-4 n-Butyl acetate)

Flammability:

Flammable.

Lower and upper explosion limit

Lower:

1.2 Vol % (123-86-4 n-Butyl acetate)

Upper:

7.5 Vol % (123-86-4 n-Butyl acetate)

Flash point:

27 °C (DIN EN ISO 1523:2002)

Auto-ignition temperature:

370 °C (DIN 51794, 123-86-4 n-Butyl acetate)

Decomposition temperature:

Not determined.

pH:

Not determined.

Viscosity:

Kinematic viscosity at 20 °C:

10-15 s (DIN 53211/4)

Dynamic:

Not determined

Solubility

water:

Not miscible or difficult to mix.

Partition coefficient n-octanol/water (log value):

Not determined.

Vapour pressure at 20 °C:

10.7 hPa

Vapour pressure at 50 °C:

55 hPa

Density and/or relative density

Density at 20 °C:

1.029 g/cm³ (DIN EN ISO 2811-1)

Relative density

Not determined.

Vapour density	Not determined.
Other information	
Appearance:	
Form:	Fluid
Important information on protection of health and environment, and on safety.	
Ignition temperature:	Product is not selfigniting.
Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Solvent content:	
VOC (EC)	45.54 %
Solids content (weight-%):	54.5 %
Change in condition	
Evaporation rate:	Not determined.
Information with regard to physical hazard classes	
Explosives:	Void
Flammable gases:	Void
Aerosols:	Void
Oxidising gases:	Void
Gases under pressure:	Void
Flammable liquids:	Flammable liquid and vapour.
Flammable solids:	Void
Self-reactive substances and mixtures:	Void
Pyrophoric liquids:	Void
Pyrophoric solids:	Void
Self-heating substances and mixtures:	Void
Substances and mixtures, which emit flammable gases in contact with water:	Void
Oxidising liquids:	Void
Oxidising solids:	Void
Organic peroxides:	Void
Corrosive to metals	Void
Desensitised explosives	Void

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 hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity Harmful if inhaled.

LD/LC50 values relevant for classification:		
28182-81-2 Hexamethylene diisocyanate, oligomers		
Inhalative	LC50/4 h	1.5 mg/l (rat)

Respiratory or skin sensitisation May cause an allergic skin reaction.

STOT-single exposure May cause respiratory irritation. May cause drowsiness or dizziness.

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.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Endocrine disrupting properties:

The product does not contain substances with endocrine disrupting properties.

Other adverse effects

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.

13- DISPOSAL CONSIDERATION

Waste treatment methods

Recommendation

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

Uncleaned packaging:

Recommendation: Packagings that may not be cleansed are to be disposed of in the same manner as the product.

14- TRANSPORT INFORMATION

UN number or ID number

ADR, IMDG, IATA UN1263

UN proper shipping name

ADR UN1263 PAINT RELATED MATERIAL
IMDG, IATA PAINT RELATED MATERIAL

Transport hazard class(es)

ADR



Class 3 (F1) Flammable liquids..
Label 3

IMDG, IATA



DE231468544
E6029442
IRER: SASCHA HAGEMANN

BANK: HEIDELBERGER VOLKSBANK EG
IBAN: DE78 6729 0000 0042 8627 03
BIC: GENODE61HD

Class	3 Flammable liquids.
Label	3
Packing group	
ADR, IMDG, IATA	III
Environmental hazards:	Not applicable
Special precautions for user	Warning: Flammable liquids.
Hazard identification number (Kemler code):	30
EMS Number:	F-E, S-E
Stowage Category	A
Maritime transport in bulk according to IMO	
Instruments:	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	5L
Transport category	3
Tunnel restriction code	D/E
IMDG	
Limited quantities (LQ)	5L
UN "Model Regulation":	UN 1263 PAINT RELATED MATERIAL, 3, III

1.5 – 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 5000 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 50000 t

National regulations:

Additional classification according to Decree on Hazardous Materials, Annex II:

Class	Share in %
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.
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.
H341 Suspected of causing genetic defects.
H360FD May damage fertility. May damage the unborn child.
H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
EUH066 Repeated exposure may cause skin dryness or cracking.
EUH204 Contains isocyanates. May produce an allergic reaction.

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:

ADR: Accord relatif au transport international 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
- Muta. 2: Germ cell mutagenicity – Category 2
- Repr. 1B: Reproductive toxicity – Category 1B
- STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
- STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
- 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

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.