Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

SAFETY DATA SHEET
acc. to OSHA HCS

Revision date: 04.05.2019

1- IDENTIFICATION

Product details
Trade name: Hardener
Article number: 12663
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 – HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.

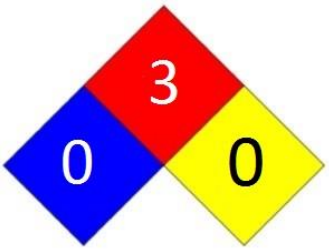
GHS07

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
GHS label elements
The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS02 GHS07
Signal word Warning
Hazard-determining components of labelling:
Hexamethylene diisocyanate, oligomers
n-Butyl acetate
2-Methoxy-1-methylethyl acetate

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Hazard statements
Flammable liquid and vapor.
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/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapors/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.
Classification system:
NFPA ratings (scale 0 - 4)



Health = 0
Fire = 3
Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 3

Reactivity = 0

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 the substances listed below with nonhazardous additions.

Dangerous components:		
123-86-4	n-Butyl acetate	50-100%
28182-81-2	Hexamethylene diisocyanate, oligomers	25-50%
108-65-6	2-Methoxy-1-methylethyl acetate	2.5-<10%
112-07-2	2-Butoxyethyl acetate	2.5-<5%

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

4– FIRST - AID MEASURES

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:
Immediately wash with water and soap and rinse thoroughly.
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.
Information for doctor:
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, extinguishing 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
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide (CO)
Hydrogen cyanide (HCN)
Advice for firefighters
Protective equipment: Mouth respiratory protective device.
Additional information
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6– ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation
Wear protective equipment. Keep unprotected persons away.

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Environmental precautions:
Keep contaminated washing water and dispose of appropriately.
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 an 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.
Protective Action Criteria for Chemicals

PAC-1:		
123-86-4	n-Butyl acetate	5 ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	7.8 mg/m³
108-65-6	2-Methoxy-1-methylethyl acetate	50 ppm
112-07-2	2-Butoxyethyl acetate	15 ppm
77-58-7	dibutyltin dilaurate	1.1 mg/m³
822-06-0	hexamethylene-di-isocyanate	0.018 ppm
PAC-2:		
123-86-4	n-Butyl acetate	200 ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	86 mg/m³
108-65-6	2-Methoxy-1-methylethyl acetate	1,000 ppm
112-07-2	2-Butoxyethyl acetate	35 ppm
77-58-7	dibutyltin dilaurate	8 mg/m³
822-06-0	hexamethylene-di-isocyanate	0.2 ppm
PAC-3:		
123-86-4	n-Butyl acetate	3000* ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	510 mg/m³
108-65-6	2-Methoxy-1-methylethyl acetate	5000* ppm
112-07-2	2-Butoxyethyl acetate	210 ppm

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

77-58-7	dibutyltin dilaurate	48 mg/m³
822-06-0	hexamethylene-di-isocyanate	3 ppm

7– HANDLING AND STORAGE

Handling:
Precautions for safe handling
Use only in well ventilated areas.
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 protection against explosions and fires:
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: Store only in the original receptacle.
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 receptacle 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 systems: No further data; see item 7.
Control parameters
Components with limit values that require monitoring at the workplace:
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

123-86-4 n-Butyl acetate

PEL REL TLV	Long-term value: 710 mg/m³, 150 ppm Short-term value: 950 mg/m³, 200 ppm Long-term value: 710 mg/m³, 150 ppm Short-term value: 712 mg/m³, 150 ppm Long-term value: 238 mg/m³, 50 ppm
108-65-6 2-Methoxy-1-methylethyl acetate	
WEEL	Long-term value: 50 ppm
112-07-2 2-Butoxyethyl acetate	
REL TLV	Long-term value: 33 mg/m³, 5 ppm Long-term value: 130 mg/m³, 20 ppm

Additional information: The lists that were valid during the creation 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:

Apply solvent resistant skin cream before beginning work.
Do not eat, drink, smoke or sniff while working.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.

Breathing equipment:

Filter A/P2
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

Butyl rubber, BR
Recommended thickness of the material: ³ 0.7 mm
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.

Breakthrough time of glove material

Value for the permeation: Level ≤ 2
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

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Body protection: Protective work clothing

9 – PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties **General Information** **Appearance:** **Form:** **Colour:** **Odour:** **Odour threshold:**	 *Fluid* *According to product specification* *Characteristic* *Not determined.*
pH-value:	*Not determined.*
Change in condition **Melting point/Melting range:** **Boiling point/Boiling range:**	 *Undetermined.* *124-128 °C (255.2-262.4 °F)*
Flash point:	*27 °C (80.6 °F) (DIN 53213)*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	*315 °C (599 °F) (DIN 51794)*
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product is not explosive. However, formation of explosive air/vapour mixtures are possible.*
Explosion limits: **Lower:** **Upper:**	 *1.2 Vol %* *7.5 Vol %*
Vapor pressure at 20 °C (68 °F):	*10.7 hPa (8 mm Hg)*
Density at 20°C (68 °F): **Relative density** **Vapour density** **Evaporation rate**	*0.974 g/cm³ (8.128 lbs/gal) (DIN 53217)* *Not determined.* *Not determined.* *Not determined.*
Solubility in / **Miscibility with water:**	 *Not miscible or difficult to mix.*
Partition coefficient (n-octanol/water):	*Not determined.*
Viscosity: **Dynamic:** **Kinematic at 20 °C (68 °F):**	 *Not determined.* *13 s (DIN 53211/4)*
Solvent content: **VOC content:**	 *63.92 %* *623 g/l / 5.2 lb/gal*

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Solids content (weight-%):	*36.1 %*
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 Reacts with alcohols, amines, aqueous acids and alkalis.
Conditions to avoid No further relevant information available.
Incompatible materials: No further relevant information available.
Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Possible in traces.
Nitrogen oxides
Hydrogen chloride (HCl)
Hydrogen cyanide (prussic acid)
Carbon monoxide
Nitrogen oxides (NOx)

11– TOXILOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
123-86-4 n-Butyl acetate		
Oral Dermal	LD50 LD50	13,100 mg/kg (rat) >5,000 mg/kg (rabbit)

Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: Sensitization possible through skin contact.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
Carcinogenic categories

IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

NTP (National Toxicology Program)
None of the ingredients is listed.
OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 – ECOLOGICAL INFORMATION

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes:
Water hazard class 1 (Self-assessment): 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 be specially treated adhering to official regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Diluted caustic solution.

14– TRANSPORT INFORMATION

UN-Number
DOT, ADR, IMDG, IATA UN1263

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

UN proper shipping name

DOT	Paint related material
ADR	UN1263 PAINT RELATED MATERIAL
IMDG, IATA	PAINT RELATED MATERIAL

Transport hazard class(es)

DOT

Class	3 Flammable liquids
Label	3

ADR

Class	3 (F1) Flammable liquids
Label	3

IMDG, IATA

Class	3 Flammable liquids
Label	3

Packing group

DOT, ADR, IMDG, IATA	III

Environmental hazards:

Marine pollutant:	No

Special precautions for user	Warning: Flammable liquids
Danger code (Kemler):	30
EMS Number:	F-E,S-E
Stowage Category:	A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Transport/Additional information:
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
Sara

Section 355 (extremely hazardous substances):	
None of the ingredient is listed.	
Section 313 (Specific toxic chemical listings):	
112-07-2	2-Butoxyethyl acetate
822-06-0	hexamethylene-di-isocyanate
Hazardous Air Pollutants	
822-06-0	hexamethylene-di-isocyanate

Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for females:
None of the ingredients is listed.
Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.
Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

Cancerogenity categories

EPA (Environmental Protection Agency)			
None of the ingredients is listed.			
TLV (Threshold Limit Value established by ACGIH)			
112-07-2	2-Butoxyethyl acetate	A3	2.5-<5%
77-58-7	dibutyltin dilaurate	A4	<0.1%
NIOSH-Ca (National Institute for Occupational Safety and Health)			
None of the ingredients is listed.			

GHS label elements
The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS02 GHS07

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

Signal word Warning
Hazard-determining components of labelling:
Hexamethylene diisocyanate, oligomers
n-Butyl acetate
2-Methoxy-1-methylethyl acetate
Hazard statements
H226 Flammable liquid and vapor.
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/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapors/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.
National regulations:

Class	Share in %
NK	50-100

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

16-OTHER INFORMATION

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
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
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)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic

Chamäleon GmbH
Rudolf-Diesel-Straße, 8a
69115 Heidelberg-Germany
Tel.: +49-(0)-6221 520440
Fax: +49-(0)-6221 520449
E-mail: info@chamaeleon-produktion.de
http: //www.chamaeleon-produktion.de

vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Flam. Liq. 3: Flammable liquids – Category 3
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

* Data compared to the previous version altered.

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.