Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

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

· **Product identifier**

· **Trade name: 4CR 0407 Universal-Härter extra lang**
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation** Hardening agent/ Curing agent

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
4CR Vertriebsgesellschaft mbH
Donaustraße 2
94469 Deggendorf
Tel.: +49 (0) 4841/665015
Fax: +49 (0) 4841/665016
e-Mail: order@4cr.de
· **Emergency telephone number:** +49(0)700 24112112 (CRM)

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2 Hazards identification

· **Classification of the substance or mixture**

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


Xn; Harmful

R20: Harmful by inhalation.


Xi; Irritant

R37: Irritating to respiratory system.


Xi; Sensitising

R43: May cause sensitisation by skin contact.

R10-52/53-66: Flammable. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Repeated exposure may cause skin dryness or cracking.

· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.
· **Classification system:**
The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

· **Label elements**

· **Labelling according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**
Xn Harmful

· **Hazard-determining components of labelling:**
Hexamethylene diisocyanate, oligomers

· **Risk phrases:**
10 Flammable.
20 Harmful by inhalation.
37 Irritating to respiratory system.
43 May cause sensitisation by skin contact.
52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
66 Repeated exposure may cause skin dryness or cracking.

(Contd. on page 2)

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

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 1)

· ***Safety phrases:***
2 Keep out of the reach of children.
9 Keep container in a well-ventilated place.
13 Keep away from food, drink and animal feedingstuffs.
24/25 Avoid contact with skin and eyes.
37 Wear suitable gloves.
46 If swallowed, seek medical advice immediately and show this container or label.

· ***Special labelling of certain preparations:***
Contains isocyanates. See information supplied by the manufacturer
Restricted to professional users.
· ***Other hazards***
· ***Results of PBT and vPvB assessment***
· ***PBT:*** Not applicable.
· ***vPvB:*** Not applicable.

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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	Hexamethylene diisocyanate, oligomers Xn R20; Xi R37; Xi R43 Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 108-65-6 EINECS: 203-603-9	2-methoxy-1-methylethyl acetate R10 Flam. Liq. 3, H226	10-25%
CAS: 123-86-4 EINECS: 204-658-1	n-butyl acetate R10-66-67 Flam. Liq. 3, H226; STOT SE 3, H336	<20.0%
CAS: 112-07-2 EINECS: 203-933-3	2-butoxyethyl acetate Xn R20/21 Acute Tox. 4, H312; Acute Tox. 4, H332	<20.0%
CAS: 64742-95-6 EINECS: 265-199-0	Solvent naphtha (petroleum), light arom. Xn R65; Xi R37; N R51/53 R10-66-67 Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Chronic 2, H411; STOT SE 3, H335+H336	<20.0%

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

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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.
· ***After eye contact:*** Rinse opened eye for several minutes under running water.
· ***After swallowing:*** If symptoms persist consult doctor.

(Contd. on page 3)

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

Printing date 15.06.2011 Version number 7 Revision: 15.06.2011

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 2)

· **Information for 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 Firefighting measures

· **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 (NOx)
Carbon monoxide (CO)
Hydrogen cyanide (HCN)
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

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6 Accidental release measures

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

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.

(Contd. on page 4)

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

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 3)

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/m³* *exposition evaluation valu TRGS 430 (EBW)*
108-65-6 2-methoxy-1-methylethyl acetate	
WEL ()	*Short-term value: 548 mg/m³, 100 ppm* *Long-term value: 274 mg/m³, 50 ppm* *Sk*
123-86-4 n-butyl acetate	
WEL ()	*Short-term value: 966 mg/m³, 200 ppm* *Long-term value: 724 mg/m³, 150 ppm*
112-07-2 2-butoxyethyl acetate	
WEL ()	*Short-term value: 50 ppm* *Long-term value: 20 ppm* *Sk*

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

· ***Exposure controls***
· ***Personal protective equipment:***
All personal protective equipment, including respiratory protecitve 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.

(Contd. on page 5)

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

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 4)

· ***Protection of hands:***
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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***
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.

· ***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

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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/Melting range:	*Undetermined.*
Boiling point/Boiling range:	*124°C*
· ***Flash point:***	*38°C (DIN 53213)*
· ***Flammability (solid, gaseous):***	*Not applicable.*
· ***Ignition temperature:***	*280°C (DIN 51794)*
· ***Decomposition temperature:***	*Not determined.*
· ***Self-igniting:***	*Product is not selfigniting.*
· ***Danger of explosion:***	*Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.*
· ***Explosion limits:***	
Lower:	*0.7 Vol %*
Upper:	*10.8 Vol %*
· ***Vapour pressure at 20°C:***	*10.7 hPa*

(Contd. on page 6)

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

Printing date 15.06.2011 Version number 7 Revision: 15.06.2011

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 5)

· **Density at 20°C:**	0.989 g/cm³ (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.
· **Segregation coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic at 20°C:	13 s (DIN 53211/4)
· **Solvent content:**	
Organic solvents:	63.9 %
VOC (EC)	632.7 g/l
Solids content (weight-%):	36.0 %
· **Other information**	No further relevant information available.

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10 Stability and reactivity

· **Reactivity**
· **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 (NOx)

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**		
112-07-2 2-butoxyethyl acetate		
Oral	LD50	2400 mg/kg (rat)
Dermal	LD50	1580 mg/kg (rabbit)
64742-95-6 Solvent naphtha (petroleum), light arom.		
Oral	LD50	>2000 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rab)
Inhalative	LC50/4 h	>10.2 mg/l (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** Sensitization possible through skin contact.

(Contd. on page 7)

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

Printing date 15.06.2011 Version number 7 Revision: 15.06.2011

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 6)

· **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant

12 Ecological information

· **Toxicity**
· **Acquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:**
Water hazard class 2 (German Regulation) : 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.
Harmful to aquatic organisms
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **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.

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14 Transport information

· **Land transport ADR/RID (cross-border)**

· **ADR/RID class:** 3 (F1) Flammable liquids.
· **Danger code (Kemler):** 30
· **UN-Number:** 1263
· **Packaging group:** III
· **Hazard label:** 3
· **UN proper shipping name:** 1263 PAINT RELATED MATERIAL, special provision 640E

(Contd. on page 8)

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

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 7)

· ***Tunnel restriction code*** *D/E*

· ***Maritime transport IMDG:***

· ***IMDG Class:*** *3*
· ***UN Number:*** *1263*
· ***Label*** *3*
· ***Packaging group:*** *III*
· ***EMS Number:*** *F-E,S-E*
· ***Marine pollutant:*** *No*
· ***Proper shipping name:*** *PAINT RELATED MATERIAL*

· ***Air transport ICAO-TI and IATA-DGR:***

· ***ICAO/IATA Class:*** *3*
· ***UN/ID Number:*** *1263*
· ***Label*** *3*
· ***Packaging group:*** *III*
· ***Proper shipping name:*** *PAINT RELATED MATERIAL*

· ***Special precautions for user*** *Warning: Flammable liquids.*
· ***Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code*** *Not applicable.*

15 Regulatory information

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

· ***National regulations:***

· ***Information about limitation of use:***

112-07-2	*2-butoxyethyl acetate*	*4*

Class	***Share in %***
NK	*50-100*

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

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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.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

(Contd. on page 9)

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 15.06.2011 *Version number 7* *Revision: 15.06.2011*

Trade name: 4CR 0407 Universal-Härter extra lang

(Contd. of page 8)

R10 Flammable.
R20 Harmful by inhalation.
R20/21 Harmful by inhalation and in contact with skin.
R37 Irritating to respiratory system.
R43 May cause sensitisation by skin contact.
R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65 Harmful: may cause lung damage if swallowed.
R66 Repeated exposure may cause skin dryness or cracking.
R67 Vapours may cause drowsiness and dizziness.

· ***Department issuing MSDS:*** *Laboratory*
· ***Contact:*** *Ingo Bolls*
· **** Data compared to the previous version altered.***