



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

### 1 Identification

- Product identifier
- Trade name: **KRISTAL HS Hardener LV STD**
- Article number: 8040
- Relevant identified uses of the substance or mixture and uses advised against  
No further relevant information available.
- Application of the substance / the mixture Hardening agent/ Curing agent
- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:  
Kristal Coatings B.V.  
Platinawerf 22B  
6641 TL Beuningen - Holland  
Tel: 0031 24 67 526 36  
Fax: 0031 24 67 533 60
- Information department: Product safety department: info@kristalcoatings.nl
- Emergency telephone number: 0031 24 67 526 36

### \* 2 Hazard(s) identification

- Classification of the substance or mixture



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- Label elements

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

- Hazard pictograms



GHS02



GHS07



GHS08

- Signal word Danger

- Hazard-determining components of labeling:

Hexamethylene diisocyanate, oligomers

xylene

ethylbenzene

4-chloro-alpha,alpha,alpha-trifluorotoluene

- Hazard statements

Highly flammable liquid and vapor.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

(Contd. on page 2)

— US —



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(Contd. of page 1)

May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**

Wear protective gloves/protective clothing/eye protection/face protection.

Do not breathe mist/vapours/spray.

If swallowed: Immediately call a poison center/doctor.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **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:**

CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119485796-17	Hexamethylene diisocyanate, oligomers	25-50%
CAS: 98-56-6 EINECS: 202-681-1 Reg.nr.: 1735902	4-chloro-alpha,alpha,alpha-trifluorotoluene	25-50%
CAS: 67-64-1 EINECS: 200-662-2 Reg.nr.: 01-2119471330-49 05-2114366599-29	acetone	2.5-10%
CAS: 1330-20-7 EINECS: 215-535-7 Reg.nr.: 01-2119488216-32 01-2119486136-34 01-2119555267-33	xylene	2.5-10%
CAS: 64742-95-6 EINECS: 265-199-0 Reg.nr.: 01-2119455851-35	Solvent naphtha (petroleum), light arom.	0.5-2.5%
CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-butyl acetate	0.5-2.5%

### \* 4 First-aid measures

· **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.

· **After inhalation:**

Supply fresh air and to be sure call for a doctor.

(Contd. on page 3)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 2)

- In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**  
Do not induce vomiting; immediately call for medical help.  
Rinse mouth.
- **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 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO<sub>2</sub> or powder. Fight larger fights with alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** Carbon monoxide (CO)
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

## 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.
- **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

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaustion at the workplace.  
Prevent formation of aerosols.  
Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.  
Examination of lung function should be carried out on a regular basis on persons spraying this preparation.
- **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 in a cool location.
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Store in cool, dry conditions in well sealed receptacles.
- **Storage class:** 3
- **Specific end use(s)** No further relevant information available.

— US —  
(Contd. on page 4)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

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Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 3)

### \* 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:

#### 67-64-1 acetone

PEL 2400 mg/m<sup>3</sup>, 1000 ppmREL 590 mg/m<sup>3</sup>, 250 ppmTLV Short-term value: (1782) NIC-1187 mg/m<sup>3</sup>, (750) NIC-500 ppmLong-term value: (1188) NIC-475 mg/m<sup>3</sup>, (500) NIC-200 ppm

BEI

#### 1330-20-7 xylene

PEL 435 mg/m<sup>3</sup>, 100 ppmREL Short-term value: 655 mg/m<sup>3</sup>, 150 ppmLong-term value: 435 mg/m<sup>3</sup>, 100 ppmTLV Short-term value: 651 mg/m<sup>3</sup>, 150 ppmLong-term value: 434 mg/m<sup>3</sup>, 100 ppm

BEI

#### 123-86-4 n-butyl acetate

PEL 710 mg/m<sup>3</sup>, 150 ppmREL Short-term value: 950 mg/m<sup>3</sup>, 200 ppmLong-term value: 710 mg/m<sup>3</sup>, 150 ppmTLV Short-term value: 950 mg/m<sup>3</sup>, 200 ppmLong-term value: 713 mg/m<sup>3</sup>, 150 ppm

- Ingredients with biological limit values:

#### 67-64-1 acetone

BEI 50 mg/L

Medium: urine

Time: end of shift

Parameter: Acetone (nonspecific)

#### 1330-20-7 xylene

BEI 1.5 g/g creatinine

Medium: urine

Time: end of shift

Parameter: Methylhippuric acids

- Additional information:

The lists that were valid during the creation were used as basis.

Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this preparation is used.

Examination of lung function should be carried out on a regular basis on persons spraying this preparation.

- Exposure controls

- Personal protective equipment:

- 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.

Avoid contact with the eyes and skin.

- Breathing equipment:

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.

Filter AX

- 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

(Contd. on page 5)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 4)

- 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.

Butyl rubber, BR

- Penetration time of glove material

Thickness of the gloves  $\geq 0.625$  mm (acetone)

Value for the permeation: Level  $\geq 480$  min (acetone)

The exact break through 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: Solvent resistant protective clothing

## \* 9 Physical and chemical properties

- Information on basic physical and chemical properties

- General Information

- Appearance:

Form: Fluid

Color: Clear

- Odor: Characteristic

- Odour threshold: Not determined.

- pH-value: Not determined.

- Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 56 °C (133 °F)

- Flash point: -8 °C (18 °F)

- Flammability (solid, gaseous): Not applicable.

- Ignition temperature: 465 °C (869 °F)

- Decomposition temperature: Not determined.

- Auto igniting: Product is not selfigniting.

- Danger of explosion: Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- Explosion limits:

Lower: 2.6 Vol %

Upper: 13.0 Vol %

- Vapor pressure at 20 °C (68 °F): 233 hPa (175 mm Hg)

- Density at 20 °C (68 °F): 1.12 g/cm<sup>3</sup> (9.346 lbs/gal)

- Relative density: Not determined.

- Vapour density: Not determined.

- Evaporation rate: Not determined.

- Solubility in / Miscibility with

Water: Insoluble.

- Partition coefficient (n-octanol/water): Not determined.

- Viscosity:

Dynamic: Not determined.

Kinematic at 20 °C (68 °F): 12 s (DIN 53211/4)

(Contd. on page 6)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 5)

- Solvent content:
  - Organic solvents: 60.8 %
  - VOC content: 12.3 %
  - 138.0 g/l / 1.15 lb/gl
- Other information: No further relevant information available.

## 10 Stability and reactivity

- Reactivity
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions
  - Reacts with alcohols.
  - Reacts with amines.
  - Reacts with water.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: Oxidizing agents.
- Hazardous decomposition products: No dangerous decomposition products known.

## 11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification:

### 98-56-6 4-chloro-alpha,alpha,alpha-trifluorotoluene

Oral LD50 11500 mg/kg (mouse)  
13000 mg/kg (rat)

### 67-64-1 acetone

Oral LD50 >2000 mg/kg (rat)  
Dermal LD50 >2000 mg/kg (rabbit)  
Inhalative LC50/4h > 20 mg/l (rat)

### 1330-20-7 xylene

Oral LD50 3523 mg/kg (rat)  
Dermal LD50 12126 mg/kg bw (rabbit)  
Inhalative LC50/4h 27124 mg/m<sup>3</sup> (rat)

### 123-86-4 n-butyl acetate

Oral LD50 10760 mg/kg (rat) (OECD 423)  
Dermal LD50 >14112 mg/kg (rabbit) (OECD 402)  
Inhalative LC50/4h 23.4 mg/l (rat) (OECD 403 in vivo, aerosol)

- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: 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)

1330-20-7 xylene: 3

- NTP (National Toxicology Program)

None of the ingredients is listed.

- OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 6)

## 12 Ecological information

- Toxicity
- Aquatic toxicity:

### 98-56-6 4-chloro-alpha,alpha,alpha-trifluorotoluene

IC50/72h 8 mg/l (algae)  
LC50/96h 40-60 mg/l (fish)

### 67-64-1 acetone

EC50 8800 mg/l (daphnia magna)  
EC50/96h 8300 mg/l (lepomis macrochirus)  
IC50 >100 mg/l (algae)  
>100 mg/l (fish)

### 1330-20-7 xylene

EC50/48h 1 mg/l (daphnia magna)  
IC50/72h 2.2 mg/l (algae)  
LC50/96h 2.6 mg/l (oncorhynchus mykiss)

### 123-86-4 n-butyl acetate

EC50/48h 44 mg/l (daphnia magna)  
EC50/72h 647.7 mg/l (desmodesmus supspicatus)  
IC50 356 mg/l (tetrahymena pyriformis) (40 h)  
LC50/96h 18 mg/l (pimphales promelas) (OECD 203)  
NOAEL/72h 200 mg/l (desmodesmus supspicatus)

- Persistence and degradability No further relevant information available.
- Degree of elimination:

### 123-86-4 n-butyl acetate

OECD 301D 83 % (/) (28 d)

- Behavior in environmental systems:
- Bioaccumulative potential

### 1330-20-7 xylene

LogPow 3.15 (/)

- Mobility in soil No further relevant information available.
- Ecotoxicological effects:
- Remark: Harmful to fish
- Additional ecological information:

- General notes:

Water hazard class 2 (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.  
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 of together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

## 14 Transport information

- UN-Number
- DOT, ADR, ADN, IMDG, IATA UN1263
- UN proper shipping name
- DOT, IMDG, IATA PAINT

(Contd. on page 8)

US



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

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Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 7)

· ADR/ADN 1263 PAINT

· Transport hazard class(es)

· DOT



· Class 3 Flammable liquids

· Label 3

· ADR,ADN, IMDG, IATA



· Class 3 Flammable liquids

· Label 3

· Packing group

· DOT, ADR,ADN, IMDG, IATA II

· Environmental hazards:

· Marine pollutant: No

· Special precautions for user Warning: Flammable liquids

· Danger code (Kemler): 33

· EMS Number: F-E,S-E

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

· UN "Model Regulation": UN1263, PAINT, 3, II

### \* 15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

1330-20-7 xylene

822-06-0 hexamethylene-di-isocyanate

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· 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)

67-64-1 acetone: I

1330-20-7 xylene: I

· TLV (Threshold Limit Value established by ACGIH)

67-64-1 acetone: A4

1330-20-7 xylene: A4

(Contd. on page 9)





# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/06/2015

Reviewed on 07/06/2015

Trade name: **KRISTAL HS Hardener LV STD**

(Contd. of page 8)

- 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

GHS08

- Signal word Danger

- Hazard-determining components of labeling:

Hexamethylene diisocyanate, oligomers  
xylene  
ethylbenzene  
4-chloro-alpha,alpha,alpha-trifluorotoluene

- Hazard statements

Highly flammable liquid and vapor.  
Causes skin irritation.  
Causes serious eye irritation.  
May cause an allergic skin reaction.  
Suspected of causing cancer.  
May cause respiratory irritation.  
May cause damage to organs through prolonged or repeated exposure.

- Precautionary statements

Wear protective gloves/protective clothing/eye protection/face protection.  
Do not breathe the mist/vapours/spray.  
If swallowed: Immediately call a poison center/doctor.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Dispose of contents/container in accordance with local/regional/national/international regulations.

- National regulations:

- Other regulations, limitations and prohibitive regulations

The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation.

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

## 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.

- Contact: Dhr. B. Peters

- Date of preparation / last revision 07/06/2015 / 1

- Abbreviations and acronyms:

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  
Flam. Liq. 2: Flammable liquids, Hazard Category 2  
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2  
Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A  
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1  
Carc. 2: Carcinogenicity, Hazard Category 2  
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3  
STOT RE 2: Specific target organ toxicity - Repeated exposure, Hazard Category 2

- \* Data compared to the previous version altered.