Safety Data Sheet
acc. to OSHA HCS

Printing date 09/13/2018 Reviewed on 11/12/2015

*
1 Identification

· **Product identifier**

· **Trade name: 4CR 7437 2K-Highspeed-Klarlack**
· **Application of the substance / the mixture** Clear coating material, Varnish

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
4CR Vertriebsgesellschaft mbH
Oberer Sommerfeldweg 2
D-94469 Deggendorf
Tel.: +49 (0) 40 69 60 99 315
Fax: +49 (0) 40 69 60 99 316
E-Mail: Info@4CR.com
www.4CR.com
· **Emergency telephone number:** +49(0)700 24112112 (CRM)

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2 Hazard(s) identification

· **Classification of the substance or mixture**

GHS02 Flame

Flam. Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurized container: May burst if heated.

GHS08 Health hazard

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

GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H336 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 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Hexamethylene diisocyanate, oligomers
acetone
xylene
butyl acetate
· **Hazard statements**
H222-H229 Extremely flammable aerosol. Pressurized container: May burst if heated.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.

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H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P251 Do not pierce or burn, even after use.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 4
Reactivity = 3

· **HMIS-ratings (scale 0 - 4)**

Health = *1
Fire = 4
Reactivity = 3

· **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 the substances listed below with nonhazardous additions.

· **Dangerous components:**		
115-10-6	dimethyl ether	25-50%
67-64-1	acetone	10-25%
123-86-4	butyl acetate	2.5-<10%
28182-81-2	Hexamethylene diisocyanate, oligomers	2.5-<10%
64742-95-6	Hydrocarbons, C9, aromatics	≥0.1-<5%
112-07-2	2-butoxyethyl acetate	≥0.1-<2.5%
1330-20-7	xylene	≥0.1-<2.5%
	Reaction mass of pentamethyl-piperidyl sebacate	≥0.1-<1%
26761-45-5	2,3-epoxypropyl neodecanoate	≥0.1-<1%

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4 First-aid measures

· **Description of first aid measures**
· **General information:** 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. If symptoms persist, consult a doctor.

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· **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.

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5 Fire-fighting measures

· **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**
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.
Wear self-contained respiratory protective device.
Do not inhale explosion gases or combustion gases.

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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:**
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:**		
115-10-6	dimethyl ether	3,000 ppm
67-64-1	acetone	200 ppm

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123-86-4	butyl acetate	5 ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	7.8 mg/m3
112-07-2	2-butoxyethyl acetate	15 ppm
1330-20-7	xylene	130 ppm
100-41-4	ethylbenzene	33 ppm
868-77-9	2-hydroxyethyl methacrylate	1.9 mg/m3
108-65-6	2-methoxy-1-methylethyl acetate	50 ppm
78-83-1	isobutanol	150 ppm
77-58-7	dibutyltin dilaurate	1.1 mg/m3
556-67-2	octamethylcyclotetrasiloxane	30 ppm

· **PAC-2:**

115-10-6	dimethyl ether	3800* ppm
67-64-1	acetone	3200* ppm
123-86-4	butyl acetate	200 ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	86 mg/m3
112-07-2	2-butoxyethyl acetate	35 ppm
1330-20-7	xylene	920* ppm
100-41-4	ethylbenzene	1100* ppm
868-77-9	2-hydroxyethyl methacrylate	21 mg/m3
108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm
78-83-1	isobutanol	1,300 ppm
77-58-7	dibutyltin dilaurate	8 mg/m3
556-67-2	octamethylcyclotetrasiloxane	68 ppm

· **PAC-3:**

115-10-6	dimethyl ether	7200* ppm
67-64-1	acetone	5700* ppm
123-86-4	butyl acetate	3000* ppm
28182-81-2	Hexamethylene diisocyanate, oligomers	510 mg/m3
112-07-2	2-butoxyethyl acetate	210 ppm
1330-20-7	xylene	2500* ppm
100-41-4	ethylbenzene	1800* ppm
868-77-9	2-hydroxyethyl methacrylate	1,000 mg/m3
108-65-6	2-methoxy-1-methylethyl acetate	5000* ppm
78-83-1	isobutanol	8000* ppm
77-58-7	dibutyltin dilaurate	48 mg/m3
556-67-2	octamethylcyclotetrasiloxane	130 ppm

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Keep away from heat and direct sunlight.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
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.

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· **Information about protection against explosions and fires:**
Do not spray on a naked flame or any incandescent material.
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Observe official regulations on storing packagings with pressurized containers.
· **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:**
Do not gas tight seal receptacle.
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
Store separately from oxidising agents, strongly alkaline and strongly acidic materials, amines, alcohol and water.
· **Storage class:** 2 B
· **Specific end use(s)** No further relevant information available.

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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 other constituents have no known exposure limits.

115-10-6 dimethyl ether	
WEEL	Long-term value: 1000 ppm
67-64-1 acetone	
PEL	Long-term value: 2400 mg/m³, 1000 ppm
REL	Long-term value: 590 mg/m³, 250 ppm
TLV	Short-term value: 1187 mg/m³, 500 ppm Long-term value: 594 mg/m³, 250 ppm BEI
123-86-4 butyl acetate	
PEL	Long-term value: 710 mg/m³, 150 ppm
REL	Long-term value: 950 mg/m³, 200 ppm
TLV	Short-term value: 712 mg/m³, 150 ppm Long-term value: 238 mg/m³, 50 ppm
112-07-2 2-butoxyethyl acetate	
REL	Long-term value: 33 mg/m³, 5 ppm
TLV	Long-term value: 130 mg/m³, 20 ppm

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1330-20-7 xylene	
PEL	Long-term value: 435 mg/m³, 100 ppm
REL	Short-term value: 655 mg/m³, 150 ppm Long-term value: 435 mg/m³, 100 ppm
TLV	Short-term value: 651 mg/m³, 150 ppm Long-term value: 434 mg/m³, 100 ppm BEI

· **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.

· **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.
Avoid contact with the eyes.
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.

Use suitable respiratory protective device in case of insufficient ventilation.
· **Protection of hands:**
Solvent resistant gloves
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**
Nitrile rubber, NBR

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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**
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:	Aerosol
Color:	Clear
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	-24°C (-11 °F)
· **Flash point:**	<0°C (<32 °F) (DIN 53213)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	235°C (455 °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/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	2.6 Vol %
Upper:	18.6 Vol %
· **Vapor pressure at 20°C (68 °F):**	5,200 hPa (4,150 mm Hg)
· **Density at 20°C (68 °F):**	0.78 g/cm³ (6.509 lbs/gal) (DIN 53217)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.

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Kinematic:	Not determined.
· **Solvent content:**	
VOC content:	58.23 % 587 g/l / 4.9 lb/gl
Solids content (weight-%):	18.8 %
· **Other information**	No further relevant information available.

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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 (NOx)

*

11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
64742-95-6 Hydrocarbons, C9, aromatics		
Oral	LD50	>2,000 mg/kg (rat)
Dermal	LD50	>2,000 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:**
Sensitization possible through skin contact.
This product is a respiratory sensitiser when sprayed. COSHH requires that persons exposed are subject to appropriate health surveillance.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Irritant

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
1330-20-7	xylene	3
100-41-4	ethylbenzene	2B

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

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· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

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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.
· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **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.
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.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1950
· **UN proper shipping name**	
· **DOT**	Aerosols, flammable
· **ADR**	UN1950 Aerosols
· **IMDG**	AEROSOLS
· **IATA**	AEROSOLS, flammable

· **Transport hazard class(es)**

· **DOT**

· **Class** 2.1

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· **Label**	2.1
· **ADR**	
	
· **Class**	2 5F Gases
· **Label**	2.1
· **IMDG, IATA**	
	
· **Class**	2.1
· **Label**	2.1
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	Void
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Gases
· **Danger code (Kemler):**	-
· **EMS Number:**	F-D,S-U
· **Stowage Code**	SW1 Protected from sources of heat. SW22 For AEROSOLS with a maximum capacity of 1 litre: Category A. For AEROSOLS with a capacity above 1 litre: Category B. For WASTE AEROSOLS: Category C, Clear of living quarters.
· **Segregation Code**	SG69 For AEROSOLS with a maximum capacity of 1 litre: Segregation as for class 9. Stow "separated from" class 1 except for division 1.4. For AEROSOLS with a capacity above 1 litre: Segregation as for the appropriate subdivision of class 2. For WASTE AEROSOLS: Segregation as for the appropriate subdivision of class 2.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **IMDG**	
· **Limited quantities (LQ)**	1L
· **UN "Model Regulation":**	UN 1950 AEROSOLS, 2.1

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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.

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· **Section 313 (Specific toxic chemical listings):**

112-07-2	2-butoxyethyl acetate
1330-20-7	xylene
100-41-4	ethylbenzene

· **Proposition 65**

· **Chemicals known to cause cancer:**

100-41-4	ethylbenzene

· **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
100-41-4	ethylbenzene	D

· **TLV (Threshold Limit Value established by ACGIH)**

67-64-1	acetone	A4	10-25%
112-07-2	2-butoxyethyl acetate	A3	e"0.1-<2.5%
1330-20-7	xylene	A4	e"0.1-<2.5%
100-41-4	ethylbenzene	A3	e"0.1-<1%
77-58-7	dibutyltin dilaurate	A4	~0-≤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 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**
Hexamethylene diisocyanate, oligomers
acetone
xylene
butyl acetate

· **Hazard statements**
H222-H229 Extremely flammable aerosol. Pressurized container: May burst if heated.
H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.

· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

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P251 *Do not pierce or burn, even after use.*
P260 *Do not breathe dust/fume/gas/mist/vapors/spray.*
P305+P351+P338 *If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P405 *Store locked up.*
P410+P412 *Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F.*

· ***National regulations:***

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.

· ***Date of preparation / last revision*** *09/13/2018 / 50*
· ***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)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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
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
BEI: Biological Exposure Limit
Flam. Aerosol 1: Aerosols – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
· **** Data compared to the previous version altered.***