

Printing date 10/12/2017

Version number 1

Reviewed on 10/12/2017

1 Identification

- · Product identifier
 - · Product number LKR2154
 - Trade name: WHITE PU TOPCOAT 20SH

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· Application of the substance / the mixture For professional use
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· Details of the supplier of the safety data sheet

- Manufacturer/Supplier: IVM Chemicals srl Viale della Stazione 3 - 27020 Parona (PV) Italy tel +39 038425441
- Information department: Environmental Health and safety office hseoffice @ivmchemicals.com
- · Emergency telephone number:
- ChemTel Expert Assistance Hotline/SDS Fax Access by dialing 1-800-255-3924 or for International +1-813-248-0585.

2 Hazard(s) identification

· Classification of the substance or mixture

GI

GHS02 Flame

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

GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.

GHS07

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



· Signal word Danger

• Hazard-determining components of labeling: butan-1-ol n-butyl acetate butanone isobutyl acetate

(Contd. on page 2)

US

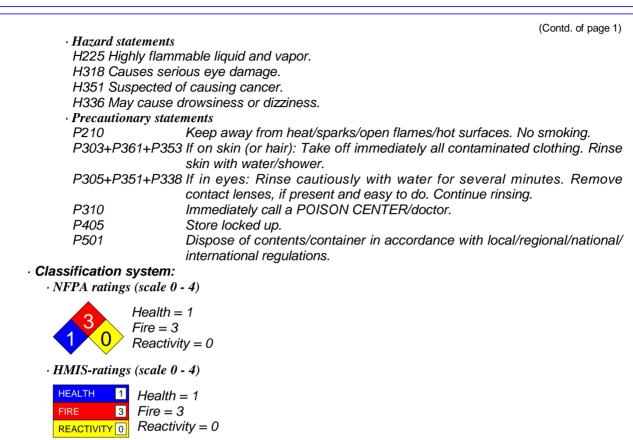


Version number 1

Reviewed on 10/12/2017

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

Printing date 10/12/2017



3 Composition/information on ingredients

· Chemical characterization: Mixtures

· Description: Mixture: consisting of the following components.

123-86-4	n-butyl acetate	15-19.9%	
	 Flam. Liq. 3, H226 STOT SE 3, H336 		
78-93-3	butanone	10-12.49%	
	 Flam. Liq. 2, H225 Eye Irrit. 2A, H319; STOT SE 3, H336 		
110-19-0	isobutyl acetate	5-9.99%	
	 Flam. Liq. 2, H225 STOT SE 3, H336 		
108-65-6	2-methoxy-1-methylethyl acetate	5-9.99%	
	🚸 Flam. Liq. 3, H226		
71-36-3	butan-1-ol	2.5-4.99%	
	 Flam. Liq. 3, H226 Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335-H336 		



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number	⁻ LKR2154
Trade name:	WHITE PU TOPCOAT 20SH

		Contd. of page 2)
141-78-6	ethyl acetate	1-2.49%
	 Flam. Liq. 2, H225 Eye Irrit. 2A, H319; STOT SE 3, H336 	
100-41-4	ethylbenzene	≥0.1-<0.5%
	 Flam. Liq. 2, H225 Carc. 2, H351; STOT RE 2, H373; Asp. Tox. 1, H304 Acute Tox. 4, H332 	

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.

- personal protective equipment for first aid responders is recommended. (please see section 8)
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- · After skin contact: Generally the product does not irritate the skin.
- · 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.
- · Information for doctor:
 - Most important symptoms and effects, both acute and delayed
 - For symptoms and effects caused by substances, refer to Section 11.
 - Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
 - · Suitable extinguishing agents: Alcohol resistant foam, CO, powder, water spray/mist.
 - · For safety reasons unsuitable extinguishing agents:
 - Do not use a jet water stream as it may scatter and spread fire.
- · Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

Advice for firefighters

Cool by spraying with water the containers to prevent product decomposition and the development of substances potentially hazardous for health and also, in the case of closed containers exposed to flames to prevent explosions.

· Protective equipment:

Hardhat with visor, fireproof clothing, suitable gloves and if necessary respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
 Wear protective equipment. Keep unprotected persons away.
 Ensure adequate ventilation
 Keep away from ignition sources
- · 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).

(Contd. on page 4)



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

82154 ITE PU TOPCOAT 20SH

Use neutra	lizing agent.	(Contd. of page	
Dispose co	ntaminated material as waste according to Section 13.		
Ensure ade	equate ventilation.		
	<i>to other sections</i> n 7 for information on safe handling.		
	n 8 for information on personal protection equipment.		
See Sectio	n 13 for disposal information.		
	Action Criteria for Chemicals		
• PAC-1:			
	1 n-butyl acetate	5 ppm	
	3 butanone	200 ppm	
) isobutyl acetate	450 ppm	
	2-methoxy-1-methylethyl acetate	50 ppm	
	3 butan-1-ol	60 ppm	
	9 silicon dioxide, chemically prepared	18 mg/m3	
	Polytetrafluoroethylene	12 mg/m3	
	6 ethyl acetate	1,200 ppr	
	2 aluminium hydroxide	8.7 mg/m	
1330-20-7		130 ppm	
1314-23-4	1 zirconium dioxide	14 mg/m3	
100-41-4	t ethylbenzene	33 ppm	
· PAC-2:			
123-86-4	1 n-butyl acetate	200 ppm	
78-93-3	B butanone	2700* ppn	
110-19-0	isobutyl acetate	1300* ppn	
108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm	
71-36-3	B butan-1-ol	800 ppm	
7631-86-9	e silicon dioxide, chemically prepared	740 mg/m	
9002-84-0	Polytetrafluoroethylene	130 mg/m	
141-78-6	6 ethyl acetate	1,700 ppn	
21645-51-2	2 aluminium hydroxide	73 mg/m3	
1330-20-7	7 xylene	920* ppm	
1314-23-4	zirconium dioxide	110 mg/m	
100-41-4	t ethylbenzene	1100* ppn	
· PAC-3:		1	
	I n-butyl acetate	3000* ppm	
	3 butanone	4000* ppm	
) isobutyl acetate	7500** ppm	
	6 2-methoxy-1-methylethyl acetate	5000* ppm	
	3 butan-1-ol	8000** ppm	
	9 silicon dioxide, chemically prepared	4,500 mg/m	
	Polytetrafluoroethylene	790 mg/m3	
	6 ethyl acetate	10000** ppr	
	2 aluminium hydroxide	440 mg/m3	
1330-20-7	-	2500* ppm	
		(Contd. on page	



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

		(Contd. of page 4)
1314-23-4	zirconium dioxide	680 mg/m3
100-41-4	ethylbenzene	1800* ppm

7 Handling and storage

· Handling:

- · Precautions for safe handling
- Ensure good ventilation/exhaustion at the workplace.
- Protect against electrostatic charges.
- Use explosion-proof apparatus / fittings and spark-proof tools.
- 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, well-ventilated area, away from heat and sources of ignition
 - Provide solvent resistant, sealed floor.
 - Observe the label precautions, the expiration date for the use, if not indicated, is from delivery date of goods.

In cases where there is no reported expiration date , it means that the product must be used within 8 months.

- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Store in cool, dry conditions in well sealed receptacles.
- · Specific end use(s) Those typical of the product and the instructions in the data sheet if required.

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: 123-86-4 n-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 ma/m³. 150 ppm Long-term value: 238 mg/m³, 50 ppm 78-93-3 butanone PEL Long-term value: 590 mg/m³, 200 ppm REL Short-term value: 885 mg/m³, 300 ppm Long-term value: 590 mg/m³, 200 ppm Short-term value: 885 mg/m³, 300 ppm TLV Long-term value: 590 mg/m³, 200 ppm BEI 110-19-0 isobutyl acetate Long-term value: 700 mg/m³, 150 ppm PEL (Contd. on page 6) us



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number	[.] LKR2154
Trade name:	WHITE PU TOPCOAT 20SH

REL	Contd. of pag Long-term value: 700 mg/m³, 150 ppm
TLV	
ILV	Short-term value: 172 mg/m³, 150 ppm Long-term value: 238 mg/m³, 50 ppm
108-0	65-6 2-methoxy-1-methylethyl acetate
WEE	L Long-term value: 50 ppm
71-36	6-3 butan-1-ol
PEL	Long-term value: 300 mg/m³, 100 ppm
REL	Ceiling limit value: 150 mg/m³, 50 ppm Skin
TLV	Long-term value: 61 mg/m³, 20 ppm
141-7	78-6 ethyl acetate
PEL	Long-term value: 1400 mg/m ³ , 400 ppm
REL	Long-term value: 1400 mg/m³, 400 ppm
TLV	Long-term value: 1440 mg/m³, 400 ppm
100-4	41-4 ethylbenzene
PEL	Long-term value: 435 mg/m³, 100 ppm
REL	Short-term value: 545 mg/m ³ , 125 ppm
	Long-term value: 435 mg/m³, 100 ppm
TLV	Long-term value: 87 mg/m³, 20 ppm BEI
	· Ingredients with biological limit values:
78-9	3-3 butanone
BEI	2 mg/L
	Medium: urine
	Time: end of shift
	Parameter: MEK
	41-4 ethylbenzene
	0.7 g/g creatinine Medium: urine
	Time: end of shift at end of workweek
	Parameter: Sum of mandelic acid and phenylglyoxylic acid (nonspecific, semi-quantitative)
	- No d'ann an daoine le daoin
	Medium: end-exhaled air Time: not critical
	Parameter: Ethyl benzene (semi-quantitative)
	• Additional information: The lists that were valid during the creation were used as basis.
	osure controls ersonal 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.
	Avoid contact with the eyes and skin.
	• Breathing equipment: Not required.



Printing date 10/12/2017

Version number 1

Reviewed on 10/12/2017

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

(Contd. of page 6)

· Protection of hands:



Protective gloves

Due to missing tests no recommendation to the glove material can be given for the product. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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

· 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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:



Tightly sealed goggles

Information on basic physical and	chemical properties
· General Information	
· Appearance:	Fluid
· Form:	
· Color:	According to product specification
· Odor:	Characteristic
• Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
 Melting point/Melting range: 	Undetermined.
 Boiling point/Boiling range: 	77°C (°F)
· Flash point:	-4°C (°F)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	>300°C (°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:	1.2 Vol %
· Upper:	11.5 Vol %
· Vapor pressure at $20^{\circ}C$ (68 °F):	105 hPa (mm Hg)



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

		(Contd. of page	
· Density at 20°C (68 °F):	1.2 g/cm³ (lbs/gal)		
· Relative density	Not determined.		
· Vapor density	Not determined.		
· Evaporation rate	Not determined.		
· Solubility in / Miscibility with			
· Water:	Not miscible or difficult to mix.		
· Partition coefficient (n-octanol/wa	ter): Not determined.		
· Viscosity:			
· Dynamic:	Not determined.		
• <i>Kinematic at 20</i> • <i>C</i> (68 • <i>F</i>):	55 s (ISO 6 mm)		
· Oxidising properties:	N.A.		
· Solvent content:			
· Water:	0.1 %		
· VOC content:	50.50 %		
	606.1 g/l / 5.06 lb/gl		
· Solids content:	49.4 %		
Other information (HAPS)			
1330-20-7 xylene		0.5-1%	
100-41-4 ethylbenzene		≥0.1-<0.5%	
Other information	No further relevant information available.		

10 Stability and reactivity

· Reactivity typical of the product as indicated in the data sheet

- Chemical stability The product is stable in normal conditions of storage and use recommended • Thermal decomposition / conditions to be avoided:
 - No decomposition if used and stored according to specifications.
- · Possibility of hazardous reactions Vapours may form explosive mixtures with air
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products:

in case of possible formation of combustion: Carbon monoxide and carbon dioxide

11 Toxicological information

- · Information on toxicological effects
 - · Acute toxicity:

·Acute i	oxicity.	
· LD/	LC50 value	es that are relevant for classification:
123-86-4	n-butyl ac	etate
Oral	LD50	10,760 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	14,000 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	21.1 mg/l (rat/szczur/mouse/souris/Maus/ratón)
78-93-3 b	utanone	·
Oral	LD50	2,001 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	5,001 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
		(Contd. on page 9)



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

innalative	LC50/4 h	21 mg/l (rat/szczur/mouse/souris/Maus/ratón) (Contd. of page
110-19-0 i		
Oral	LD50	13,400 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	17,401 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	31 mg/l (rat/szczur/mouse/souris/Maus/ratón)
108-65-6 2	erethoxy?	-1-methylethyl acetate
Oral	LD50	8,532 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	5,001 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	35.7 mg/l (rat/szczur/mouse/souris/Maus/ratón)
71-36-3 bi	ıtan-1-ol	
Oral	LD50	790 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	3,400 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	8,000 mg/l (rat/szczur/mouse/souris/Maus/ratón)
141-78-6	ethyl aceta	ate
Oral	LD50	4,934 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Dermal	LD50	20,001 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	1,600 mg/l (rat/szczur/mouse/souris/Maus/ratón)
	LC0	22.6 ppm (mouse)
100-41-4 e	ethylbenz	ene
Oral	LD50	3,500 mg/kg (rat/szczur/mouse/souris/Maus/ratón)
Dermal	LD50	15,486 mg/kg (rabbit/królik/Kaninchen/conejo/lapin)
Inhalative	LC50/4 h	17.2 mg/l (rat/szczur/mouse/souris/Maus/ratón)
S Sens • Addition Irritant Causes	Strong irrita itization: M nal toxicolo s serious e	stic effect. ant with the danger of severe eye injury. No sensitizing effects known. ogical information: ye damage. siness or dizziness.
Tita IAR expo hum sign whic Ethy Fron Hun Two styre was	erimental I hans and h ificant exp ch titanium /lbenzene m IARC M han carcin o studies o ene polym found but	

Evaluation

There is inadequate evidence in humans for the carcinogenicity of ethylbenzene. There is (Contd. on page 10)



Printing date 10/12/2017

Version number 1

Reviewed on 10/12/2017

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

suffici	ent evidence in experimental animals for the carcinogenicity ofethylbenzer	Contd. of page 9) 16.		
· IARC (International Agency for Research on Cancer - Cl. 1 and 2)				
13463-67-7	Titanium dioxide C.I. 77891 Pigment white 6	2B - DUST		
100-41-4	ethylbenzene	2B		
· NTP (National Toxicology Program)				
None of the ingredients is listed.				
· OSHA-Ca (Occupational Safety & Health Administration)				

None of the ingredients is listed.

Toxicity		
-	c toxicity:	
	n-butyl acetate	
EC50	648 mg/l (algae) (72 h)	
	44 mg/l (daphnia) (48 h)	
-	n) 18 mg/l (Fish)	
78-93-3 b	utanone	
EC50	2,029 mg/l (algae) (96 h)	
	308 mg/l (daphnia) (48 h)	
LC50 (96l	n) 2,993 mg/l (Fish)	
110-19-0	isobutyl acetate	
EC50	370 mg/l (algae) (72 h)	
	25 mg/l (daphnia)	
LC50 (96l	n) 17 mg/l (Fish)	
108-65-6	2-methoxy-1-methylethyl acetat	e
EC50	1,001 mg/l (algae) (72 h)	
	501 mg/l (daphnia) (48 h)	
•	n) 134 mg/l (Fish)	
	ethyl acetate	
EC50	165 mg/l (daphnia) (48 h)	
LC50 (96l	n) 230 mg/l (Fish)	
100-41-4	ethylbenzene	
EC50	75 mg/l (daphnia) (48 h)	
Persisten	ce and degradability No further	relevant information available.
· Substar	nces Easily biodegradable	
123-86-4	n-butyl acetate	
78-93-3	butanone	
110-19-0	isobutyl acetate	
108-65-6	2-methoxy-1-methylethyl acetate	
141-78-6	ethyl acetate	
100-41-4	ethylbenzene	
Behavior	in environmental systems:	

(Contd. on page 11)



Printing date 10/12/2017

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Chemicals coatings & polymers technologies

Version number 1

Reviewed on 10/12/2017

oduct number LKR2154 ade name: WHITE PU TOPCOA	NT 20SH
Do not allow undiluted product sewage system.	essment): slightly hazardous for water or large quantities of it to reach ground water, water course o or drainage ditch undiluted or unneutralized.
3 Disposal considerations	
sewage system. Hand over to hazardous waste o	ther with household garbage. Do not allow product to reac disposers. her in accordance with local state and federal regulations.
 Uncleaned packagings: Recommendation: Disposal must 	t be made according to official regulations.
A Transport information	
4 Transport information	
· UN-Number · DOT · IMDG, IATA	NA 1263 UN 1263
• UN proper shipping name • DOT • IMDG, IATA	Paint PAINT
Transport hazard class(es)	
·DOT	
PLANMARE LOOD	
3	
· Class	3 Flammable liquids
· Class · Label · Class · Label	3 Flammable liquids 3 3 Flammable liquids 3
· Label · Class	3 3 Flammable liquids
· Label · Class · Label	3 3 Flammable liquids
· Label · Class · Label	3 3 Flammable liquids
 Label Class Label IMDG, IATA Class Class 	3 3 Flammable liquids 3 3 Flammable liquids
 Label Class Label IMDG, IATA Class Label Packing group 	3 3 Flammable liquids 3 Flammable liquids 3



Reviewed on 10/12/2017

Printing date 10/12/2017

Version number 1

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

	(Contd. of page 1
· Special precautions for user	Warning: Flammable liquids
· Danger code (Kemler):	-
· EMS Number:	F-E,S-E
· Stowage Category	A
· Transport in bulk according to Annex I	l of
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
· IMDG	
\cdot Limited quantities (LQ)	5L
\cdot Excepted quantities (\widetilde{EQ})	Code: E1
	Maximum net quantity per inner packaging: 3
	ml
	Maximum net quantity per outer packaging
	1000 ml
UN "Model Regulation":	UN 1263 PAINT, 3, III

15 Regulatory information

· SARA			
· Secti	on 355 (extremely hazardous substances):		
None of the	e ingredients is listed.		
· Secti	on 313 (Specific toxic chemical listings) :		
78-93-3	butanone		10-12.49%
71-36-3	butan-1-ol		2.5-4.99%
1330-20-7	1330-20-7 xylene		0.5-1%
100-41-4	ethylbenzene		≥0.1-<0.5%
· TSCA (7	Toxic Substances Control Act):		
All ingredie	ents are listed.		
· Proposit	ion 65		
· Chen	nicals known to cause cancer:		
13463-67-7	7 Titanium dioxide C.I. 77891 Pigment white 6	only for Dust	15-19.9%
100-41-4	4 ethylbenzene	*	≥0.1-<0.5%
· Chen	nicals known to cause reproductive toxicity for females:		
70657-70-4	2-methoxypropyl acetate		<0.1%
· Chen	nicals known to cause reproductive toxicity for males:		·
None of the	e ingredients is listed.		
· Chen	nicals known to cause developmental toxicity:		
None of the	e ingredients is listed.		
· Carcino	genic categories		
· EPA	(Environmental Protection Agency)		
78-93-3	butanone	1	10-12.49%
71-36-3	butan-1-ol	D	2.5-4.99%
1330-20-7	xylene	1	0.5-1%
100-41-4	ethylbenzene	D	≥0.1-<0.5%
		(C	ontd. on page 13

-US



Printing date 10/12/2017

Version number 1

Reviewed on 10/12/2017

Product number LKR2154 Trade name: WHITE PU TOPCOAT 20SH

		(Contd. of page 12)
	Threshold Limit Value established by ACGIH)	
13463-67-7	Titanium dioxide C.I. 77891 Pigment white 6	A4
1330-20-7	xylene	A4
1314-23-4	zirconium dioxide	A4
100-41-4	ethylbenzene	A3
· NIOS	H-Ca (National Institute for Occupational Safety and Health)	
13463-67-7	Titanium dioxide C.I. 77891 Pigment white 6	15-19.9%

· National regulations:

The product is subject to be labeled according with the prevailing version of the regulations on hazardous substances.

· 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.

· Department issuing SDS: IVM Chemicals Srl

· Contact: See emergency phone

· Date of preparation / last revision 10/12/2017 / -· Abbreviations and acronvms: 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 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. Liq. 2: Flammable liquids - Category 2 Flam. Liq. 3: Flammable liquids - Category 3 Acute Tox. 4: Acute toxicity - Category 4 Skin Irrit. 2: Skin corrosion/irritation - Category 2 Eye Dam. 1: Serious eye damage/eye irritation - Category 1 Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A Carc. 2: Carcinogenicity - Category 2 Carc. 2: Carcinogenicity - Category 2 STOT SE 3: Specific target organ toxicity (single exposure) - Category 3 STOT RE 2: Specific target organ toxicity (repeated exposure) - Category 2 Asp. Tox. 1: Aspiration hazard - Category 1 Sources REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL and following amendments Agency ECHA web site INRS Fiche Toxicologique

IARC International agency for research on cancer