

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/09/2018

Reviewed on 03/03/2016

1 Identification

- **Product identifier**
- **Trade name: ALT R210 Resin**
- **Article number:** 114-732-005U
- **Application of the substance / the mixture** Binder
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

ALT Global, LLC
 12 Dwight Place
 Fairfield, NJ 07004
 USA
 Tel.: +1 973-287-6158
 Fax: +1 973-287-6168
 Internet: www.altglobal.com

- **Information department:**

Division product safety
 Mr. Bonyadlou
 Tel.: +1 973-287-6158
 E-Mail: mbonyadlou@altglobal.com

- **Emergency telephone number:**

For Chemical Emergency
 Spill Leak Fire Exposure or Accident
 Call CHEMTREC Day or Night

DOMESTIC NORTH AMERICA 800-424-9300

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS07

Skin Irrit. 2 H315 Causes skin 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

- **Signal word** Warning

- **Hazard-determining components of labeling:**

methyl methacrylate

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2-ethylhexyl acrylate

· **Hazard statements**

- H226 Flammable liquid and vapor.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H335 May cause respiratory irritation.

· **Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P261 Avoid breathing vapours.
- P280 Wear protective gloves/ eye protection.
- P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P312 Call a poison center/doctor if you feel unwell.
- P403+P235 Store in a well-ventilated place. Keep cool.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2
 Fire = 3
 Reactivity = 2

· **HMIS-ratings (scale 0 - 4)**



Health = 2
 Fire = 3
 Reactivity = 2

· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Does not meet the PBT-criteria of Annex XIII of REACH (self assessment).
- **vPvB:** Does not meet the vPvB-criteria of Annex XIII of REACH (self assessment).

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

CAS: 80-62-6 Index number: 607-035-00-6	methyl methacrylate	25-50%
CAS: 103-11-7 Index number: 607-107-00-7	2-ethylhexyl acrylate	10-25%
CAS: 13463-67-7	titanium dioxide	≥0.1-≤2.5%

4 First-aid measures

· **Description of first aid measures**

· **General information:**

- Immediately remove any clothing soiled by the product.
- Take affected persons out of danger area and lay down.
- Involve doctor immediately.

· **After inhalation:**

- In case of unconsciousness place patient stably in side position for transportation.
- Take affected persons into fresh air and keep quiet.
- Seek medical treatment.

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- **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. Then 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**
Headache
Dizziness
Skin sensitization.
Irritant to skin, eyes and respiratory system.
- **Indication of any immediate medical attention and special treatment needed**
After inhalation, even in the absence of signs of disease, inhaled corticosteroid (eg Ventolair) give.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** CO₂, sand, extinguishing powder, foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
In case of fire, the following can be released:
Carbon monoxide (CO)
Nitrogen oxides (NO_x)
Vapours are heavier than air.
Crawling vapors can result in greater distance from the ignition!
- **Advice for firefighters**
- **Protective equipment:**
Wear fully protective suit.
Wear self-contained respiratory protective device.
- **Additional information**
Cool endangered receptacles with water spray.
Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Ensure adequate ventilation



Keep away from ignition sources

- Use respiratory protective device against the effects of fumes/dust/aerosol.
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Do not allow to enter sewers/ surface or ground water.
Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
Do not flush with water or aqueous cleansing agents
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **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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· Protective Action Criteria for Chemicals

· PAC-1:

80-62-6	methyl methacrylate	17 ppm
103-11-7	2-ethylhexyl acrylate	15 ppm
13463-67-7	titanium dioxide	30 mg/m ³
	PEG 200 DMA	30 mg/m ³
1317-61-9	C.I.Pigment black 11	21 mg/m ³
14808-60-7	Quartz (SiO ₂)	0.075 mg/m ³
20344-49-4	iron hydroxide oxide	24 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	50 ppm
123-86-4	n-butyl acetate	5 ppm
7631-86-9	silicon dioxide, chemically prepared	18 mg/m ³
21645-51-2	aluminium hydroxide	8.7 mg/m ³
1314-23-4	zirconium oxide	14 mg/m ³

· PAC-2:

80-62-6	methyl methacrylate	120 ppm
103-11-7	2-ethylhexyl acrylate	120 ppm
13463-67-7	titanium dioxide	330 mg/m ³
	PEG 200 DMA	330 mg/m ³
1317-61-9	C.I.Pigment black 11	230 mg/m ³
14808-60-7	Quartz (SiO ₂)	33 mg/m ³
20344-49-4	iron hydroxide oxide	260 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	1,000 ppm
123-86-4	n-butyl acetate	200 ppm
7631-86-9	silicon dioxide, chemically prepared	740 mg/m ³
21645-51-2	aluminium hydroxide	73 mg/m ³
1314-23-4	zirconium oxide	110 mg/m ³

· PAC-3:

80-62-6	methyl methacrylate	570 ppm
103-11-7	2-ethylhexyl acrylate	150 ppm
13463-67-7	titanium dioxide	2,000 mg/m ³
	PEG 200 DMA	2,000 mg/m ³
1317-61-9	C.I.Pigment black 11	1,400 mg/m ³
14808-60-7	Quartz (SiO ₂)	200 mg/m ³
20344-49-4	iron hydroxide oxide	1,600 mg/m ³
108-65-6	2-methoxy-1-methylethyl acetate	5000* ppm
123-86-4	n-butyl acetate	3000* ppm
7631-86-9	silicon dioxide, chemically prepared	4,500 mg/m ³
21645-51-2	aluminium hydroxide	440 mg/m ³
1314-23-4	zirconium oxide	680 mg/m ³

7 Handling and storage

· Handling:

· Precautions for safe handling

Cool down container when heated. Cool containers exposed to heat with water. Emergency cooling must be provided in the event of an ambient fire. Keep container tightly closed to prevent heat build up (pressure increase). Avoid heat.

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- Do not refill residue into storage receptacles.
- Ensure good ventilation/exhaustion at the workplace.
at least 7-fold air changes per hour
- Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Highly volatile, flammable constituents are released during processing.
Keep ignition sources away - Do not smoke.
Fumes can combine with air to form an explosive mixture.
Only explosion-proof equipment.
Protect against electrostatic charges.
Protect from heat.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store only in the original receptacle.
Store in a cool location.
- **Information about storage in one common storage facility:**
Store away from oxidizing agents.
Store away from foodstuffs.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Storage in a collecting room is required.
Store under lock and key and with access restricted to technical experts or their assistants only.
max. Storage temperature 30 ° C
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
- **Specific end use(s)** Building coating or sealing.

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 constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

80-62-6 methyl methacrylate (25-50%)	
PEL	Long-term value: 410 mg/m ³ , 100 ppm
REL	Long-term value: 410 mg/m ³ , 100 ppm
TLV	Short-term value: 410 mg/m ³ , 100 ppm Long-term value: 205 mg/m ³ , 50 ppm
DSEN	

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Avoid contact with the eyes and skin.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Keep away from foodstuffs, beverages and feed.
Do not inhale gases / fumes / aerosols.
- **Breathing equipment:**
Ensure good ventilation.

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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

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

Check protective gloves prior to each use for their proper condition.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

• **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**

Our Recommendation is mainly on a one-time use as a short-term protection Liquid splashes. For other applications, you should contact a glove manufacturer.

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

• **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**

Butyl rubber, BR

• **For the permanent contact gloves made of the following materials are suitable:** Butyl rubber, BR

• **Not suitable are gloves made of the following materials:** Leather gloves

• **Eye protection:**



EN-Standard: EN 166



Tightly sealed goggles

• **Body protection:**



Protective work clothing

9 Physical and chemical properties

• **Information on basic physical and chemical properties**

• **General Information**

• **Appearance:**

Form: Fluid

Color: Various colors

• **Odor:** Ester-like

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· Odor threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 101 °C (213.8 °F) (MMA)
· Flash point:	23 °C (73.4 °F) (DIN EN ISO 3680)
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	252 °C (485.6 °F) (2-EHA)
· 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: Upper:	1.7 Vol % (MMA) 12.5 Vol % (MMA)
· Vapor pressure at 20 °C (68 °F):	38.7 hPa (29 mm Hg) (MMA)
· Density at 20 °C (68 °F): · Evaporation rate	1 g/cm ³ (8.35 lbs/gal) (EN ISO 2811-1) Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	log Pow: 4,29 (2-EHA); (25 °C, OECD 107) log Pow: 1,38 (MMA)
· Viscosity: Dynamic at 20 °C (68 °F):	900 mPas (EN ISO 2555)
· Solvent content: Organic solvents: VOC content:	0.0 % 0.04 % 0.4 g/l / 0.00 lb/gal
· Solids content: · Other information	49.0 % No further relevant information available.

10 Stability and reactivity

- **Reactivity** see Section 10.2
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions**
Exothermic reaction.
Reacts with peroxides and other radical forming substances.
A hazardous polymerization may occur after the exhaustion of the inhibitor.
- **Conditions to avoid** Avoid heat. Avoid direct sunlight.
- **Incompatible materials:** Heftige Reaktionen mit Peroxiden und anderen Reduktionsmittel
- **Hazardous decomposition products:**
No dangerous decomposition products used according to specifications.

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· **Additional information:**

Emergency procedures will vary depending on individual circumstances. The customer should have a contingency plan to the workplace may be present.

11 Toxicological information

· **Information on toxicological effects** There were no toxicological findings to the mixture.

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

ATE (Acute Toxicity Estimate)

Oral	LD50	>18,950 mg/kg (rat)
Inhalative	LC50/4h	>72.9 mg/l (rat)

80-62-6 methyl methacrylate

Oral	LD50	>5,000 mg/kg (rat) (OECD 401)
	NOAEL	2,000 ppm (rat) drinking water, 6-2000 ppm Findings: No toxic effects
Dermal	LC50	>5,000 mg/kg (rabbit)
Inhalative	NOAEL	25 ppm (rat) 25 - 400 ppm Findings: Damage to mucous membranes in the nose at 400 ppm
	LC50/4h	29.8 mg/l (rat)

103-11-7 2-ethylhexyl acrylate

Oral	LD50	4,435 mg/kg (rat) (BASF-Test)
Dermal	LC50	7,520 mg/kg (hare)

13463-67-7 titanium dioxide

Oral	LD50	>20,000 mg/kg (rat)
Dermal	LC50	>10,000 mg/kg (hare)
Inhalative	LC50/4h	>6.82 mg/l (rat)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **Other information (about experimental toxicology):**

Due to the high vapor pressure is a harmful concentration in the air quickly been reached. At high concentrations can occur narcotic effect.

· **Subacute to chronic toxicity:** not tested

· **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)**

80-62-6	methyl methacrylate	3
103-11-7	2-ethylhexyl acrylate	3
13463-67-7	titanium dioxide	2B
14808-60-7	Quartz (SiO ₂)	1
128-37-0	Butylated hydroxytoluene	3
7631-86-9	silicon dioxide, chemically prepared	3

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· NTP (National Toxicology Program)	
14808-60-7	Quartz (SiO ₂) K
· OSHA-Ca (Occupational Safety & Health Administration)	
None of the ingredients is listed.	

12 Ecological information

· Toxicity	
80-62-6 methyl methacrylate	
EC3/16h	100 mg/l (Pseudomonas putida) (Cell proliferation inhibition test, Bringmann-Kühn)
· Aquatic toxicity:	
80-62-6 methyl methacrylate	
EC50/48h	69 mg/l (daphnia magna) (OECD 202)
LC50/96h	>79 mg/l (Rainbow trout) (OECD 203)
ErC50/72h	>110 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
NOEC/72h	>110 mg/l (Selenastrum capricornutum) (OECD 201)
EC50/72h	>110 mg/l (Selenastrum capricornutum) (OECD 201)
NOEC	9.4 mg/l (Danio rerio) (OECD 210) fish early life stage test, 35 days 37 mg/l (daphnia magna) (OECD 211) 21 days
103-11-7 2-ethylhexyl acrylate	
other (28d)	>1,000 mg/kg (Soil microorganisms) (OECD 217) The product has not been tested. The statement has been derived from products of a similar structure or composition.
EC50/48h (static)	1.3 mg/l (daphnia magna) (OECD-Richtline 202) Part 1
LC50/96h (static)	1.81 mg/l (Rainbow trout) (OECD 203)
NOEC/21d	0.19 mg/l (daphnia magna) The details of the toxic effect relates to the analytically determined concentration. The product has not been tested. The statement has been derived from products of a similar structure or composition.
EC50/72h (static)	1.71 mg/l (scenedesmus subspicatus) (OECD 201) Die Angaben der toxischen Wirkung bezieht sich auf die analytisch ermittelte Konzentration.

- **Persistence and degradability** Easily biodegradable
- **Other information:** The product is easily biodegradable.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** May be accumulated in organism
- **Mobility in soil**
 MMA: A binding to the solid phase of soil, sediment and sewage sludge is not expected. From the water surface the substance is slowly evaporated into the atmosphere. Where the substance into the environment he verleibt preferably in the compartment into which it has emerged.
 2-EHA: The product floats on water and does not dissolve. Adsorption on soil is not likely.
- **Additional ecological information:**
- **CSB-value:** 2-EHA: Theoretical oxygen demand (TOD) = 5.6 g/g
- **BSB5-value:** 0.14 g/g (MMA)
- **General notes:**
 Water hazard class 1 (Self-assessment): slightly hazardous for water
 Do not allow product to reach ground water, water course or sewage system.

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- **Results of PBT and vPvB assessment**
- **PBT:** Does not meet the PBT-criteria of Annex XIII of REACH (self assessment).
- **vPvB:** Does not meet the vPvB-criteria of Annex XIII of REACH (self assessment).
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
Hazardous waste according to Waste Catalogue (EWC). If recycling is not possible, waste must be in compliance with local regulations to be removed.
- **Recommendation:**





Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Uncured product residues are special waste.
Cured product residues are not hazardous waste.

- **Uncleaned packagings:**
- **Recommendation:**
This material and its container must be disposed of as hazardous waste.
Disposal must be made according to official regulations.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IATA · ADR, ADN, IMDG 	<p>UN1263 Void</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR, ADN, IMDG · IATA 	<p>Paint Void PAINT</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT 	<p></p> <p>3 Flammable liquids 3</p>
<ul style="list-style-type: none"> · ADR, ADN, IMDG · Class 	<p>Void</p>
<ul style="list-style-type: none"> · IATA 	<p></p> <p>3 Flammable liquids 3</p>

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· Packing group	
· DOT, IATA	III
· ADR, IMDG	Void
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Remarks:	Classification according to viscosity clause (2.2.3.1.5) > 450 l: 3 F1, III (2.2.3.1.5)
· IMDG	
· Remarks:	Classification according to viscosity clause (2.3.2.5) > 30 l: 3, III (2.3.2.5)
· UN "Model Regulation":	Void

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):**

80-62-6 methyl methacrylate

· **TSCA (Toxic Substances Control Act):**

80-62-6	methyl methacrylate
103-11-7	2-ethylhexyl acrylate
13463-67-7	titanium dioxide
	PEG 200 DMA
1317-61-9	C.I.Pigment black 11
14808-60-7	Quartz (SiO ₂)
20344-49-4	iron hydroxide oxide
3147-75-9	2-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol
8002-74-2	Paraffin waxes and Hydrocarbon waxes
128-37-0	Butylated hydroxytoluene
108-65-6	2-methoxy-1-methylethyl acetate
	Silan, dichlordimethyl-, Reaktionsprodukte mit Siliciumdioxid
123-86-4	n-butyl acetate
7631-86-9	silicon dioxide, chemically prepared
21645-51-2	aluminium hydroxide
1314-23-4	zirconium oxide

· **Proposition 65**

· **Chemicals known to cause cancer:**

13463-67-7 titanium dioxide

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14808-60-7	Quartz (SiO ₂)	
· 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)		
80-62-6	methyl methacrylate	E, NL
· TLV (Threshold Limit Value established by ACGIH)		
80-62-6	methyl methacrylate	A4
13463-67-7	titanium dioxide	A4
14808-60-7	Quartz (SiO ₂)	A2
128-37-0	Butylated hydroxytoluene	A4
1314-23-4	zirconium oxide	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health)		
13463-67-7	titanium dioxide	
14808-60-7	Quartz (SiO ₂)	
· National regulations:		
· Information about limitation of use:		
Employment restrictions concerning young persons must be observed.		
Employment restrictions concerning pregnant and lactating women must be observed.		
· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.		

* 16 Other information

These figures relate to the product as delivered.

Sector of Use

Relevant identified uses of the mixture

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU19 Building and construction work

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

SU21 Consumer uses: Private households / general public / consumers

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.

· Training hints

Teaching about hazards and precautions to hand the operating instructions (Technical Rule 555). Instruction must take place before the start of employment and at least annually thereafter.

· Date of preparation / last revision 10/09/2018 / 22

· 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)

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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
Flam. Liq. 3: Flammable liquids – Category 3
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

• Sources

www.gestis.de
www.echa.eu
logkow.cisti.nrc.ca

• * Data compared to the previous version altered.