

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

Printing date 31.01.2017

V- 1

Revision: 19.05.2016

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

1.1 Product identifier

Trade name: Q 40-100 MS Hardener fast

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: professional use.

Uses advised against: do-it-yourself

Application of the substance / the mixture Hardening agent/ Curing agent

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Q-Company Int. GmbH
Beckershof 3
24558 Henstedt-Ulzburg
web: www.qrefinish.com
phone: +49 (0)4193-75400

Further information obtainable from: msds@qrefinish.com

1.4 Emergency telephone number:

+49 (0)551-19240 (Giftinformationszentrum-Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS02

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS08

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

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2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02 GHS07 GHS08

Signal word Danger

Hazard-determining components of labelling:

hexamethylene diisocyanate homopolymer

n-butyl acetate

toluene-diisocyanate

aromatic polyisocyanate

tosyl isocyanate

Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P284 In case of inadequate ventilation wear respiratory protection.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

EUH066 Repeated exposure may cause skin dryness or cracking.

Contains isocyanates. May produce an allergic reaction.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

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vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.2 Chemical characterisation: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 123-86-4 EINECS: 204-658-1 Reg.nr.: 01-2119485493-29	n-butyl acetate ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336	25-50%
CAS: 28182-81-2 NLP: 500-060-2 Reg.nr.: 01-2119485796-17	hexamethylene diisocyanate homopolymer ⚠ Acute Tox. 4, H332; Skin Sens. 1, H317; STOT SE 3, H335	10-20%
CAS: 53317-61-6 NLP: 500-120-8	aromatic polyisocyanate ⚠ Eye Irrit. 2, H319; Skin Sens. 1, H317	10-25%
CAS: 108-65-6 EINECS: 203-603-9 Reg.nr.: 01-2119475791-29	2-methoxy-1-methylethyl acetate ⚠ Flam. Liq. 3, H226	5-15%
CAS: 1330-20-7 EINECS: 215-535-7 Reg.nr.: 01-2119488216-32	xylene ⚠ Flam. Liq. 3, H226; ⚠ STOT RE 2, H373; Asp. Tox. 1, H304; ⚠ Acute Tox. 4, H312; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	1-5%
CAS: 4083-64-1 EINECS: 223-810-8 Reg.nr.: 01-2119980050-47	tosyl isocyanate ⚠ Resp. Sens. 1, H334; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	0.1-<0.5%
CAS: 26471-62-5 EINECS: 247-722-4 Reg.nr.: 01-2119454791-34	toluene-diisocyanate ⚠ Acute Tox. 1, H330; ⚠ Resp. Sens. 1, H334; Carc. 2, H351; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335; Aquatic Chronic 3, H412	0.1-<0.5%

Additional information:

For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures**4.1 Description of first aid measures****General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Take affected persons out of danger area and lay down.

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.

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; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures**5.1 Extinguishing media****Suitable extinguishing agents:**

CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

For safety reasons unsuitable extinguishing agents: Water with full jet

5.2 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.

Hydrogen cyanide (HCN)

Isocyanate vapors.

Carbon monoxide and carbon dioxide

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

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Additional information

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources.

Avoid contact with the eyes and skin.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Do not flush with water or aqueous cleansing agents.

Dispose of the material collected according to regulations.

6.4 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.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Do not eat, drink, smoke or sniff while working.

Do not allow to enter sewers/ surface or ground water.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Fumes can combine with air to form an explosive mixture.

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7.2 Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.

Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from oxidising agents.

Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Store receptacle in a well ventilated area.

7.3 Specific end use(s) No further relevant information available.**SECTION 8: Exposure controls/personal protection****Additional information about design of technical facilities:**

No further data; see item 7.

8.1 Control parameters**Ingredients with limit values that require monitoring at the workplace:****123-86-4 n-butyl acetate**

WEL (Great Britain)	Short-term value: 966 mg/m ³ , 200 ppm Long-term value: 724 mg/m ³ , 150 ppm
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108-65-6 2-methoxy-1-methylethyl acetate

WEL (Great Britain)	Short-term value: 548 mg/m ³ , 100 ppm Long-term value: 274 mg/m ³ , 50 ppm Sk
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IOELV (EU)

Short-term value: 550 mg/m ³ , 100 ppm Long-term value: 275 mg/m ³ , 50 ppm Skin
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1330-20-7 xylene

WEL (Great Britain)	Short-term value: 441 mg/m ³ , 100 ppm Long-term value: 220 mg/m ³ , 50 ppm Sk; BMGV
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IOELV (EU)

Short-term value: 442 mg/m ³ , 100 ppm Long-term value: 221 mg/m ³ , 50 ppm Skin
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4083-64-1 tosyl isocyanate	
WEL (Great Britain)	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO
26471-62-5 toluene-diisocyanate	
WEL (Great Britain)	Short-term value: 0.07 mg/m ³ Long-term value: 0.02 mg/m ³ Sen; as -NCO

Regulatory information WEL (Great Britain): EH40/2011

DNELs		
123-86-4 n-butyl acetate		
Dermal	DNEL	7 mg/kg bw/day (long-term - systemic effects, workers)
Inhalative	DNEL	960 mg/m ³ (acute - systemic effects, workers) 960 mg/m ³ (acute - local effects, workers) 480 mg/m ³ (long-term - systemic effects, workers) 480 mg/m ³ (long-term - local effects, workers)
28182-81-2 hexamethylene diisocyanate homopolymer		
Inhalative	DNEL	1 mg/m ³ (acute - local effects, workers) 0.5 mg/m ³ (long-term - local effects, workers)
108-65-6 2-methoxy-1-methylethyl acetate		
Dermal	DNEL	153.5 mg/kg bw/day (long-term - systemic effects, workers)
Inhalative	DNEL	275 mg/m ³ (long-term - systemic effects, workers)
1330-20-7 xylene		
Dermal	DNEL	180 mg/kg bw/day (long-term - systemic effects, workers)
Inhalative	DNEL	289 mg/m ³ (acute - systemic effects, workers) 289 mg/m ³ (acute - local effects, workers) 77 mg/m ³ (long-term - systemic effects, workers) 77 mg/m ³ (long-term - local effects, workers)
4083-64-1 tosyl isocyanate		
Dermal	DNEL	0.92 mg/kg bw/day (long-term - systemic effects, workers)
Inhalative	DNEL	3.24 mg/m ³ (long-term - systemic effects, workers)
PNECs		
123-86-4 n-butyl acetate		
PNEC	0.18 mg/l (freshwater environment)	

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PNEC	0.018 mg/l (marine environment) 0.36 mg/l (intermittent releases) 35.6 mg/l (sewage treatment plants) 0.981 mg/kg (freshwater sediment environment)
28182-81-2 hexamethylene diisocyanate homopolymer	
PNEC	0.127 mg/l (freshwater environment) 0.0127 mg/l (marine environment) 1.27 mg/l (intermittent releases) 38.3 mg/l (sewage treatment plants) 266700 mg/kg (freshwater sediment environment) 26670 mg/kg (marine sediment environment) 53182 mg/kg (soil)
108-65-6 2-methoxy-1-methylethyl acetate	
PNEC	0.635 mg/l (freshwater environment) 0.0635 mg/l (marine environment) 6.35 mg/l (intermittent releases) 100 mg/l (sewage treatment plants) 3.29 mg/kg (freshwater sediment environment) 0.329 mg/kg (marine sediment environment)
1330-20-7 xylene	
PNEC	0.327 mg/l (freshwater environment) 6.58 mg/l (sewage treatment plants) 12.46 mg/kg (freshwater sediment environment) 2.31 mg/kg (soil)
4083-64-1 tosyl isocyanate	
PNEC	0.03 mg/l (freshwater environment) 0.003 mg/l (marine environment) 0.3 mg/l (intermittent releases) 0.4 mg/l (sewage treatment plants) 0.0172 mg/kg (marine environment) 0.172 mg/kg (freshwater sediment environment) 0.0168 mg/kg (soil)

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Ingredients with biological limit values:	
1330-20-7 xylene	
BMGV (Great Britain)	650 mmol/mol creatinine Medium: urine Sampling time: post shift Parameter: methyl hippuric acid

Regulatory information BMGV (Great Britain): EH40/2011

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

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Ensure good ventilation/exhaustion at the workplace.

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Keep ignition sources away - Do not smoke.

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.

Do not eat or drink while working.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Filter A/P2

Protection of hands:



Protective gloves

Check the permeability prior to each renewed use of the glove.

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 (EN 374).

Material of gloves

Butyl rubber, BR

Fluorocarbon rubber (Viton)

Nitrile rubber, NBR

PVA gloves

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Recommended thickness of the material: $\geq 0,7$ mm

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

Value for the permeation: Level 6 ≥ 480 min.

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: Protective work clothing

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:	Fluid
Colour:	Colourless
Odour:	Characteristic
Odour threshold:	Not determined.

pH-value: Not applicable.

Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.

Flash point: 24 °C

Flammability (solid, gas): Not applicable.

Decomposition temperature: Not determined.

Auto-ignition temperature: Not determined.

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Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
Explosion limits:	
Lower:	1.0 Vol %
Upper:	15.0 Vol %
Vapour pressure at 20 °C:	10.7 hPa
Density at 20 °C:	1 g/cm ³
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with water:	Reacts with water.
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity**10.1 Reactivity** No decomposition if used according to specifications.**10.2 Chemical stability**

No decomposition if used and stored according to specifications.

10.3 Possibility of hazardous reactions

Reacts with water.

Reacts with alkali, amines and strong acids.

Reacts with oxidising agents.

Fumes can combine with air to form an explosive mixture.

10.4 Conditions to avoid Protect from heat and direct sunlight.**10.5 Incompatible materials:** No further relevant information available.**10.6 Hazardous decomposition products:**

Carbon monoxide and carbon dioxide

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

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification:

123-86-4 n-butyl acetate

Oral	LD50	10760 mg/kg (rat)
Dermal	LD50	10760 mg/kg (rat) >14000 mg/kg (rabbit)
Inhalative	LC50/4 h	23.4 mg/l (rat)

28182-81-2 hexamethylene diisocyanate homopolymer

Oral	LD50	> 5000 mg/kg (rat)
Dermal	LD50	> 2000 mg/kg (rat)
Inhalative	LC50/4 h	11 mg/l (ATE)

53317-61-6 aromatic polyisocyanate

Oral	LD50	>5000 mg/kg (rat)
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108-65-6 2-methoxy-1-methylethyl acetate

Oral	LD50	>5000 mg/kg (rat)
Dermal	LD50	>5000 mg/kg (rabbit)
Inhalative	LC50/6 h	4345 mg/l (rat)

1330-20-7 xylene

Oral	ATE	>2000 mg/kg
Dermal	ATE	1466.67 mg/kg
Inhalative	ATE	12.09 mg/l (vapour)

4083-64-1 tosyl isocyanate

Oral	LD50	2330 mg/kg (rat)
Dermal	LD50	>2000 mg/kg (rat)

26471-62-5 toluene-diisocyanate

Oral	LD50	5110 mg/kg (rat)
Dermal	LD50	>9400 mg/kg (rabbit)
Inhalative	LC50/4 h	0.107 mg/l (rat) (dust/ mist)
	LD50/1 h	0.47 mg/l (rat) (vapour)

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Primary irritant effect:**Skin corrosion/irritation**

Based on available data, the classification criteria are not met.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

Carcinogenicity Based on available data, the classification criteria are not met.**Reproductive toxicity**

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard Based on available data, the classification criteria are not met.**SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****123-86-4 n-butyl acetate**

LC50/96 h	18 mg/l (Pimephales promelas)
TT/16 h	115 mg/l (Pseudomonas putida)
EC50/48 h	44 mg/l (daphnia)
EC50/72 h	675 mg/l (algae)

28182-81-2 hexamethylene diisocyanate homopolymer

LC50/96 h	>100 mg/l (fish)
EC50/3 h	3828 mg/l (microorganisms)
EC50/48 h	>100 mg/l (Daphnia magna)
EC50/72 h	>1000 mg/l (Scenedesmus subspicatus)

53317-61-6 aromatic polyisocyanate

EC50	>10000 mg/l (microorganisms)
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108-65-6 2-methoxy-1-methylethyl acetate	
LC50/96 h	>100 mg/l (fish)
EC50/48 h	>500 mg/l (Daphnia magna)
EC20/30 min	>1000 mg/l (microorganisms)
EC50/72 h	>1000 mg/l (Pseudokirchnerella subcapitata)
EC50	>100 mg/l (Pseudokirchnerella subcapitata) >100 mg/l (Pimephales promelas) >100 mg/l (Daphnia magna)
1330-20-7 xylene	
LC50/96 h	2.6 mg/l (fish)
IC50/72 h	2.2 mg/l (algae)
EC50/48 h	>1-10 mg/l (Daphnia magna)
EC50/24 h	96 mg/l (microorganisms)
4083-64-1 tosyl isocyanate	
EC50/48 h	>100 mg/l (Daphnia magna)
EC50/72 h	30 mg/l (Pseudokirchnerella subcapitata)
LC50/48 h	>45 mg/l (fish)
26471-62-5 toluene-diisocyanate	
LC50/96 h	133 mg/l (fish)
EC50/3 h	>100 mg/l (microorganisms)
ErC50/96 h	4300 mg/l (Chlorella vulgaris)
EC50/48 h	12.5 mg/l (Daphnia magna)
12.2 Persistence and degradability	
123-86-4 n-butyl acetate	
Biodegradation	83 % (readily biodegradable) (OECD 301 D, 28 d, aerobic)
28182-81-2 hexamethylene diisocyanate homopolymer	
Biodegradation	1 % (not readily biodegradable) (OECD 301 D, 28 d, aerobic)
53317-61-6 aromatic polyisocyanate	
Biodegradation	(not readily biodegradable)
108-65-6 2-methoxy-1-methylethyl acetate	
Biodegradation	100 % (readily biodegradable) (OECD 302 B, 8 d, aerobic)
1330-20-7 xylene	
Biodegradation	>60 % (readily biodegradable) (OECD 301 F, 28 d, aerobic)

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4083-64-1 tosyl isocyanate	
Biodegradation	86 % (readily biodegradable) (OECD 301 D, 28 d, aerobic)
26471-62-5 toluene-diisocyanate	
Biodegradation	0 % (not readily biodegradable) (OECD 302 C, 28 d, aerobic)
12.3 Bioaccumulative potential	
123-86-4 n-butyl acetate	
BCF	15.3 (-)
log Pow	2.3
28182-81-2 hexamethylene diisocyanate homopolymer	
BCF	3.2 (-)
log Pow	9.81
108-65-6 2-methoxy-1-methylethyl acetate	
log Pow	0.56
1330-20-7 xylene	
BCF	25.9
log Pow	3.15
12.4 Mobility in soil	
123-86-4 n-butyl acetate	
log Koc	1.27
28182-81-2 hexamethylene diisocyanate homopolymer	
log Koc	7.8
108-65-6 2-methoxy-1-methylethyl acetate	
Koc	1.7

Additional ecological information:
General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

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

European waste catalogue

08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances
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Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number
ADR, IMDG, IATA

UN1263

14.2 UN proper shipping name
ADR
IMDG, IATA

1263 PAINT RELATED MATERIAL
 PAINT RELATED MATERIAL

14.3 Transport hazard class(es)
ADR, IMDG, IATA



Class
Label

3
 3

14.4 Packing group
ADR, IMDG, IATA

III

14.5 Environmental hazards:
Marine pollutant (IMDG):

No

14.6 Special precautions for user
Danger code (Kemler):
EMS Number:

Warning: Flammable liquids.
 30
 F-E,S-E

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Stowage Category	A
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	

ADR	
Limited quantities (LQ)	5L
Transport category	3
Tunnel restriction code	D/E

IMDG	
Limited quantities (LQ)	5L
UN "Model Regulation":	UN 1263 PAINT RELATED MATERIAL, 3, III

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Directive 2012/18/EU****Named dangerous substances - ANNEX I** None of the ingredients is listed.**Seveso category P5c** FLAMMABLE LIQUIDS**Qualifying quantity (tonnes) for the application of lower-tier requirements**

5,000 t

Qualifying quantity (tonnes) for the application of upper-tier requirements

50,000 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3**National regulations:****Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

15.2 Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H226 Flammable liquid and vapour.

H304 May be fatal if swallowed and enters airways.

H312 Harmful in contact with skin.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H330 Fatal if inhaled.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

H351 Suspected of causing cancer.

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

H412 Harmful to aquatic life with long lasting effects.

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

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Flammable liquids – Category 3

Acute Tox. 1: Acute toxicity – Category 1

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Resp. Sens. 1: Sensitisation - Respiratory. Hazard category 1

Skin Sens. 1: Sensitisation - Skin. Hazard Category 1

Carc. 2: Carcinogenicity. Hazard Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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Asp. Tox. 1: Aspiration hazard – Category 1

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard –
Category 3

Sources European Chemicals Agency, <http://echa.europa.eu/>

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