

Safety Data Sheet

STARCOAT PMMA A PRIMER
(2016)

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

1.1 Product identifier

Trade name: STARCOAT PMMA A PRIMER (2016)

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

See Section 16
Application of the substance / the mixture Priming.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Axter Ltd, Harbour Landing, Fox's Marina,
The Strand, Wherstead, Ipswich IP2 8NJ
Tel: +44 (0) 1473 724056
Email: info@axterltd.co.uk
Website: www.axter.co.uk

1.4 Emergency telephone:

Axter Ltd - +44 (0) 1473 724056
(this line is open from 8.00 am to 5.30 pm, Monday to Friday).
In the event of a medical enquiry involving this product, members of
the public should contact:
NHS 111
a doctor or
a local hospital accident and emergency department.
The NPIS (National Poisons Information Service) helpline is available
for enquiries from medical professionals only.
Tel: 0344 892 0111

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flam. Liq. 2	H225 Highly flammable liquid and vapour.
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
Aquatic Chronic 3	H412 Harmful to aquatic life with long lasting effects.

Additional information:

The full text of the classification and labelling elements mentioned is given in Section 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

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

Hazard pictograms



GHS02



GHS07

Signal word Danger

Hazard determining components of labelling:

Methyl methacrylate
Bisphenol-A-epichlorohydrin
2-Ethylhexyl acrylate
Neopentylglycol propoxylated diacrylate
Diethanol-p-toluidine

Hazard statements

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statements

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. 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 [or shower].
P312	Call a POISON CENTER/ doctor if you feel unwell.
P403+P235	Store in a well-ventilated place. Keep cool.

2.3 Other hazards**Results of PBT and vPvB assessment****PBT:**

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

vPvB:

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

Section 3: Composition/information on ingredients**3.2 Mixtures**

Description: Mixture of substances listed below with non-hazardous additions.

Dangerous components:		
CAS: 80-62-6 EINECS: 202-615-1 Reg.nr.: 01-2119452498-28	Methyl methacrylate	≥25 - ≤50%
	Flam. Liq. 2, H225 Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335	
CAS: 25068-38-6 NLP: 500-033-5	Bisphenol-A-epichlorohydrin	10 - 25%
	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317	
CAS: 103-11-7 EINECS: 203-080-7 Reg.nr.: 01-2119453158-37	2-Ethylhexyl acrylate	≥2.5 - <10%
	Skin Irrit. 2, H315 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Chronic 3, H412	
CAS: 84170-74-1 Reg.nr.: 01-2119970213-43	Propoxylated neopentyl glycol diacrylate	≥1 - <2.5%
	Aquatic Chronic 2, H411 Skin Sens. 1B, H317	
EC number: 911-490-9 Reg.nr.: 01-2119979579-10	Diethanol-p-toluidine	≥0.1 - <1%
	Eye Dam. 1, H318 Acute Tox. 4, H302 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Chronic 3, H412	

Additional information: For the wording of the listed hazard phrases refer to Section 16.

Section 4: First aid measures**4.1 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.

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; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Headache

Dizziness

Skin sensitisation.

Irritant to skin, eyes and respiratory system.

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

Carbon dioxide, sand, extinguishing powder, 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.

In case of fire, the following can be released:

Carbon monoxide (CO)

Nitrogen oxides (NO_x)

5.3 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.

Section 6: Accidental release measures**6.1 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.

6.2 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.

6.3 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).

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

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.

Not giving remnants back into the storage vessels.

Providing good ventilating/suction at work.

At least 7-fold air changes per hour

Prevent formation of aerosols.

Information about fire - and explosion protection:

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.

7.2 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 oxidising agents.

Store away from foodstuffs.

Further information about storage conditions:

Store in cool, dry conditions in well sealed receptacles.

Store under lock and key and with access restricted to technical experts or their assistants only.

Max. Storage temperature 30°C

Keep container tightly sealed.

Protect from heat and direct sunlight.

7.3 Specific end use(s)

Building coating or sealing.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Additional information about design of technical facilities: No further data; see section 7.

Ingredients with limit values that require monitoring at the workplace:		
80-62-6 Methyl methacrylate (25-50%)		
WEL	Short-term value: 416 mg/m³, 100ppm Long-term value: 208 mg/m³, 50ppm	
DNELs		
80-62-6 methyl methacrylate		
Inhalative	DNEL DNEL (worker) DNEL (population)	208 mg/m³ (worker) 210 mg/m³ (long term - local effects) 210 mg/m³ (long term - systemic effects) Long-term 74.3 mg/m³ (long term - systemic effects) 105 mg/m³ (long term - local effects)
103-11-7 2-Ethylhexyl acrylate		
Dermal	DNEL	242 µg/cm² (Employee / Industrial / Commercial) Long-term and short-term
Inhalative	DNEL	37.5 mg/m³ (Employee / Industrial / Commercial) 38 mg/m³ (human)
Diethanol-p-toluidine		
Dermal	DNEL (worker)	1.4 mg/kg bw/day (Long-term - systemic effects)
Inhalative	DNEL (worker)	9.8 mg/m³ (Long-term - systemic effects)
PNECs		
80-62-6 Methyl methacrylate		
PNEC PNEC sediment	1.48 mg/kg 1.47 mg/kg dw (ground) 5.74 mg/kg dw (freshwater)	
PNEC	0.094 mg/l (seawater) 0.94 mg/l (freshwater)	
103-11-7 2-Ethylhexyl acrylate		
Boden	2.3 mg/l (Soil micro-organisms) 1 mg/l (ground)	
PNEC	1 mg/kg 0.0023 mg/kg (oral intake)	
water	0.126 mg/l (sediment) 0.002727 mg/l (freshwater)	
PNEC	2.3 mg/l	
Diethanol-p-toluidine		
PNEC sediment	0.12 mg/kg dw (seawater) 1.2 mg/kg dw (water)	
PNEC	0.005 mg/l (seawater) 0.048 mg/l (water)	

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

8.2 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.

Respiratory protection

Ensure good ventilation.
Indoors and where limit values are exceeded, use a filtering respirator: filter type A1; for high concentrations, use A2; for intense or prolonged exposure, use a self-contained breathing apparatus.

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.
General recommendation: The usage time of the protective gloves is approx. 50% of the penetration time measured in the laboratory.

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.

Protective gloves according EN 374.

Suitable material: nitrile.

Penetration time of glove material

Our recommendation is mainly on a one-time use as a short-term protection from 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.

Gloves made of the following material are suitable for permanent contact in work areas without heightened risk of injury (e.g. Laboratory)

Butyl rubber, BR

Gloves made of the following materials are suitable for permanent contact

Butyl rubber, BR

Gloves made of the following materials are not suitable

Leather gloves

Eye protection

Tightly sealed goggles. EN standard: EN 166

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	Different according to colouring
Odour	After MMA.
Odour threshold	Not determined.
pH-value	Mixture is non-polar/aprotic.

Change in condition:

Melting point/freezing point	Undetermined.
Initial boiling point and boiling range	101°C (80-62-6 methyl methacrylate)
Flash point	17°C (DIN EN ISO 3680)
Flammability	Highly flammable.
Auto-ignition temperature	252°C (103-11-7 2-Ethylhexyl acrylate)
Decomposition temperature	Not determined.
Ignition temperature	Product is not self-igniting.
Explosive properties	Not determined.

Explosion limits:

Lower	1.7 Vol % (103-11-7 2-Ethylhexyl acrylate)
Upper	12.5 Vol % (80-62-6 Methyl methacrylate)
Vapour pressure at 20°C	38.7 hPa (80-62-6 Methyl methacrylate)
Density at 20°C	1.01-1.08 g/cm ³ (EN ISO 2811-1)
Evaporation rate	No data available.
Solubility in / Miscibility with water	Not miscible or difficult to mix.

Partition coefficient: n-octanol/water:

80-62-6 Methyl methacrylate	1.38
103-11-7 2-Ethylhexyl acrylate	4.29

Viscosity:

Dynamic at 20°C	350-850 mPas (EN ISO 2555)
Kinematic at 20°C	324-842 mm ² /s (EN ISO 2431)

Solvent content:

Organic solvents	0 %
VOC (EC)	0 %

Solids content 55-60 %

9.2 Other information No further relevant information available.

Section 10: Stability and reactivity

10.1 Reactivity

Reacts violently with (strong) oxidising agents: (increased) risk of fire or explosion. Reacts violently with (strong) reducing agents.

Flammable aerosol.

10.2 Chemical stability

Avoid direct sunlight, heat and sources of ignition.

No decomposition if used according to specifications.

10.3 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.

10.4 Conditions to avoid:

Avoid heat.

Avoid direct sunlight.

10.5 Incompatible materials:

Reacts with peroxides and other free-radical generators.

10.6 Hazardous decomposition products:

No dangerous decomposition products used according to specifications.

Additional information:

Emergency procedures depend on the circumstances. The user must have an emergency response plan in place at the workplace.

Section 11: Toxicological information

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

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

LD/LC50 values relevant for classification:

80-62-6 Methyl methacrylate

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

25068-38-6 Bisphenol-A-epichlorohydrin		
Oral	LD50	>5,000 mg/kg (rat)
103-11-7 2-Ethylhexyl acrylate		
Oral	LD50	4,435 mg/kg (rat) (BASF-Test)
	LD50	4,435 mg/kg (rat)
Dermal	LD50	7,522 mg/kg (hare)
	LC50	7,520 mg/kg (hare)
	LD50	7,522 mg/kg (hare)
84170-74-1 Neopentylglycol propoxylated diacrylate		
Dermal	LD50	>2,000 mg/kg (rat)
Diethanol-p-toluidine		
Oral	LD50	500 mg/kg (ATE)

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

Causes skin irritation.

Serious eye damage/irritation

Causes serious eye irritation.

Respiratory or skin sensitization

May cause an allergic skin reaction.

Other information (about experimental toxicology)

Due to the high vapour 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:**Toxicokinetics, metabolism and distribution**

The drug is metabolized rapidly (MMA).

Acute effects (acute toxicity, irritation and corrosivity)		
80-62-6 Methyl methacrylate		
Oral	LD50	>5,000 mg/kg (rat)
103-11-7 2-Ethylhexyl acrylate		
Oral	LD50	4,435 mg/kg (rat)

Repeated dose toxicity

No data available

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

Not tested

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.

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**

80-62-6 Methyl methacrylate	
EC3 / 16h	100 mg/l (Pseudomonas putida) (Cell proliferation inhibition test, Bringmann-Kühn)
EC50 / 21d	49 mg/l (daphnia)
103-11-7 2-Ethylhexyl acrylate	
EC50 / 21d	0.5 mg/l (daphnia)
Aquatic toxicity	
80-62-6 Methyl methacrylate	
EC50	170 mg/l (aquatic algae and cyanobacteria)
EC50 / 48h	69 mg/l (daphnia)
LC50 / 96h	69 mg/l (daphnia magna) (OECD 202)
ErC50 / 72h	>79 mg/l (aquatic vertebrates - in vivo)
NOEC / 72h	>79 mg/l (Rainbow trout) (OECD 203)
NOEC / 21d	>110 mg/l (alga)
EC50 / 72h	>110 mg/l (Pseudokirchneriella subcapitata) (OECD 201)
EC0	49 mg/l (alga)
NOEC	>110 mg/l (Selenastrum capricornutum) (OECD 201)
EC50 / 72h	37 mg/l (daphnia)
EC0	>110 mg/l (Selenastrum capricornutum) (OECD 201)
NOEC	100 mg/l (escherichia coli)
	9.4 mg/l (Danio rerio) (OECD 210)
	fish early life stage test, 35 days
	37 mg/l (daphnia magna) (OECD 211)
	21 days
25068-38-6 Bisphenol-A-epichlorohydrin	
EC50 / 48h (static)	1.7 mg/l (daphnia magna) (OECD 202, Acute Immobilisation Test)
LC50 / 96h (static)	1.5 mg/l (fish) (OECD 203, Acute Toxicity Test)
NOEC / 21d	0.3 mg/l (daphnia magna) (OECD 211, Reproduction Test)
EC50 / 72h (static)	9.4 mg/l (Alge (Desmodesmus subspicatus))

103-11-7 2-Ethylhexyl acrylate

Other (28d)	>1,000 mg/kg (Soil micro-organisms) (OECD 217) The product has not been tested. The statement has been derived from products of a similar structure or composition.
EC50 / 48h	1.3 mg/l (daphnia) 1.3 mg/l (daphnia magna) (OECD-Richtline 202)
LC50 / 96h	Part 1 1.81 mg/l (aquatic vertebrates - in vivo) 1.81 mg/l (fish) 1.81 mg/l (Rainbow trout) (OECD 203)
ErC50 / 72h NOEC / 21d	1.71 mg/l (alga) 0.19 mg/l (daphnia) 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) The information regarding toxic effects refers to the analytically determined concentration.

12.2 Persistence and degradability

Easily biodegradable.

12.3 Bioaccumulative potential

2-EHA:

May bioaccumulate in organisms.

Bioaccumulation potential:

Bioconcentration Factor: 282.4 (calculated)

12.4 Mobility in soil

MMA: Binding to the solid phase (soil, sediment or sewage sludge) is not expected. The substance evaporates slowly from the water's surface into the atmosphere. If the substance is released into the environment, it tends to remain in the compartment into which it has been released.

Additional ecological information:**General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

12.5 Results of PBT and vPvB assessment**PBT:**

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

vPvB:

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

12.6 Other adverse effects

No further relevant information available.

Section 13: Disposal considerations**13.1 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 together with household waste. Do not allow product to reach sewage system.

Uncured product residues are special waste.

Cured product residues are not hazardous waste.

Uncleaned packaging:**Recommendation:**

This product (liquid) and its container must be disposed of as hazardous waste.

Disposal must be made according to official regulations.

Section 14: Transport information

14.1	UN number or ID number	
	ADR	UN1263
	IMDG	UN1263
	IATA	UN1263
14.2	UN proper shipping name	
	ADR	1263 PAINT
	IMDG	PAINT
	IATA	PAINT
14.3	Transport hazard class(es)	
	ADR	
		
	Class	3 (F1) Flammable liquids.
	Label	3
	IMDG, IATA	
		
	Class	3 Flammable liquids.
	Label	3
14.4	Packing group	
	ADR	III
	IMDG	III
	IATA	III
14.5	Environmental hazards	
	Marine pollutant	No
14.6	Special precautions for user	Warning: Flammable liquids.
	Hazard identification number (Kemler code)	-
	EMS Number	F-E, S-E
	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

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Transport category

3

Tunnel restriction code

E

Remarks

Classification according to viscosity clause (2.2.3.1.4)

> 450 litres Packing group II

IMDG**Limited quantities (LQ)**

5L

Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

Remarks

Classification according to viscosity clause (2.3.2.2)

> 450 litres Packing group II

UN "Model Regulation"

UN 1263 PAINT, 3, III

Section 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Poisons Act****Regulated explosives precursors**

None of the ingredients is listed.

Regulated poisons

None of the ingredients is listed.

Reportable explosives precursors

None of the ingredients is listed.

Reportable precursors

None of the ingredients is listed.

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

National regulations:**Information about limitation of use:**

Employment restrictions under the Maternity Protection Directive (94/33/EC).

Employment restrictions for Maternity Directive (92/85/EEC) for expectant and nursing mothers.

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

Section 16: Other information

The information given in this Safety Data Sheet is given in good faith and based on our current knowledge. We reserve the right to update and modify this document as necessary. The information in this sheet does not constitute a risk assessment for the workplace. While every effort is made to ensure that the information is accurate and up to date, it is not intended to form part of a contract or to imply any additional liability, which is expressly excluded.

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
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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

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Training hints

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

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 relatif au transport international 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)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (UK REACH)

PNEC: Predicted No-Effect Concentration (UK REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Flam. Liq. 2: Flammable liquids – Category 2

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

Skin Sens. 1: Skin sensitisation – Category 1

Skin Sens. 1B: Skin sensitisation – Category 1B

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

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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

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