Safety Data Sheet
SURFACER FR4-45 HARDENER

AkzoNobel

Safety Data Sheet dated 26/5/2020, version 4

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

1.1. Product identifier

Trade name: SURFACER FR4-45 HARDENER
Trade code: 64000000D

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

Recommended use:
Water based 2K polyurethane paint

1.3. Details of the supplier of the safety data sheet

Company:
MAPAERO SAS
10, Avenue de la Rijole
09100 PAMIERS
FRANCE
Tel : +33 (0)5 34 01 34 01 / Fax : +33 (0)5 61 60 23 30

Competent person responsible for the safety data sheet:
PSRA_PAMIERS@akzonobel.com

1.4. Emergency telephone number

Tel: 0044 151 951 3317

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

- Warning, Acute Tox. 4, Harmful if inhaled.
- Warning, Skin Sens. 1, May cause an allergic skin reaction.
- Warning, STOT SE 3, May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Warning

Hazard statements:

H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary statements:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P312 Call a doctor if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special Provisions:

EUH204 Contains isocyanates. May produce an allergic reaction.

Contains

hexamethylene diisocyanate, oligomers
Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethyl acetylacetone ; pentane-2,4-dione

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:
No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances
N.A.
3.2. Mixtures
Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
>= 50%	hexamethylene diisocyanate, oligomers	CAS: 28182-81-2 EC: 500-060-2 REACH No.: 01-2119485796-17	3.1/4/Inhal Acute Tox. 4 H332 3.4.2/1 Skin Sens. 1 H317 3.8/3 STOT SE 3 H335
>= 2.5% - < 5%	Benzene, 1,3-diisocyanatomethyl-, polymer with 1,6-diisocyanatohexane, polyethyl	CAS: 1160001-30-8 EC: 948-808-0 REACH No.: Exempt (polymer)	3.1/4/Inhal Acute Tox. 4 H332 3.4.2/1 Skin Sens. 1 H317 3.8/3 STOT SE 3 H335 4.1/C3 Aquatic Chronic 3 H412
>= 0.5% - < 2.5%	n-butyl acetate	Index number: 607-025-00-1 CAS: 123-86-4 EC: 204-658-1 REACH No.: 01-2119485493-29	2.6/3 Flam. Liq. 3 H226 3.8/3 STOT SE 3 H336 EUH066
>= 0.1% - < 0.5%	acetylacetone ; pentane-2,4-dione	CAS: 123-54-6 EC: 204-634-0 REACH No.: 01-2119458968-15	2.6/3 Flam. Liq. 3 H226 3.1/4/Oral Acute Tox. 4 H302 3.1/3/Dermal Acute Tox. 3 H311 3.1/3/Inhal Acute Tox. 3 H331 4.1/C3 Aquatic Chronic 3 H412
< 0.1%	hexamethylene-di-isocyanate	CAS: 822-06-0 EC: 212-485-8 REACH No.: 01-2119457571-37	3.1/4/Oral Acute Tox. 4 H302 3.3/2 Eye Irrit. 2 H319 3.1/1/Inhal Acute Tox. 1 H330 3.8/3 STOT SE 3 H335 3.2/2 Skin Irrit. 2 H315 3.4.1/1-1A-1B Resp. Sens. 1,1A, 1B H334 3.4.2/1-1A-1B Skin Sens. 1,1A, 1B H317

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:
Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediatley and dispose off safely.
In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
In case of Ingestion:
Do NOT induce vomiting.
In case of Inhalation:
If breathing is irregular or stopped, administer artificial respiration.
In case of inhalation, consult a doctor immediately and show him packing or label.

4.2. Most important symptoms and effects, both acute and delayed

None

4.3. Indication of any immediate medical attention and special treatment needed

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment:
None

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
Water with AFFF (Aqueous Film Forming Foam) additive

Foam

Unsuitable methods of extinction :
Water

Water jet

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible

authorities.
Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhaltion of vapours and mists.
Use localized ventilation system.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Stored between 5°C and 35°C (41°F and 95°F) in full and sealed original packaging.
Always keep in a well ventilated place.
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
- OEL Type: VLE - TWA: 1 mg/m3

n-butyl acetate - CAS: 123-86-4
- OEL Type: VLE - TWA(8h): 710 mg/m3, 150 ppm - STEL: 940 mg/m3, 200 ppm
- OEL Type: MAK - TWA: 480 mg/m3, 100 ppm
- OEL Type: ACGIH - TWA(8h): 50 ppm - STEL: 150 ppm
- OEL Type: AGS - TWA(8h): 300 mg/m3, 62 ppm - STEL: 600 mg/m3, 124 ppm
- OEL Type: TWA - TWA(8h): 724 mg/m3, 150 ppm - STEL: 966 mg/m3, 200 ppm
- OEL Type: MAK-TMW - TWA(8h): 480 mg/m3, 100 ppm
- OEL Type: MAK-KZW - STEL(15min): 480 mg/m3, 100 ppm

acetylacetone ; pentane-2,4-dione - CAS: 123-54-6
- OEL Type: ACGIH - TWA(8h): 25 ppm

hexamethylene-di-isocyanate - CAS: 822-06-0
- OEL Type: VLE - TWA: 0.15 mg/m3, 0.02 ppm
- OEL Type: VME - TWA: 0.075 mg/m3, 0.01 ppm
- OEL Type: ACGIH - TWA(8h): 0.005 ppm

- OEL Type: TWA - TWA: 0.03 mg/m3, 0.01 ppm
- OEL Type: MAK-TMW - TWA(8h): 0.035 mg/m3, 0.005 ppm
- OEL Type: MAK-KZW - STEL(15min): 0.035 mg/m3, 0.005 ppm

DNEL Exposure Limit Values

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2

Worker Professional: 0.5 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, local effects
Worker Professional: 1 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects

n-butyl acetate - CAS: 123-86-4

Worker Professional: 960 mg/m3 - Consumer: 859.7 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
Worker Professional: 960 mg/m3 - Consumer: 859.7 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects
Worker Professional: 480 mg/m3 - Consumer: 102.34 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 480 mg/m3 - Consumer: 102.34 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, local effects

PNEC Exposure Limit Values

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2

Target: Fresh Water - Value: 0.127 mg/l
Target: Marine water - Value: 0.0127 mg/l
Target: Freshwater sediments - Value: 266701 mg/kg
Target: Marine water sediments - Value: 26670 mg/kg
Target: Microorganisms in sewage treatments - Value: 88 mg/l
Target: Soil (agricultural) - Value: 53183 mg/kg

n-butyl acetate - CAS: 123-86-4

Target: Fresh Water - Value: 0.18 mg/l
Target: Marine water - Value: 0.018 mg/l
Target: Freshwater sediments - Value: 0.981 mg/kg
Target: Marine water sediments - Value: 0.0981 mg/kg
Target: Soil (agricultural) - Value: 0.0903 mg/kg
Target: Microorganisms in sewage treatments - Value: 35.6 mg/l

8.2. Exposure controls

Eye protection:

Before handling, wear safety goggles with protective sides accordance with standard EN166.

Protection for skin:

Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034 to prevent skin contact.

Protection for hands:

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Respiratory protection:

Full-/Half-/quarter-face masks (DIN EN 136/140).
Anti-gas and vapour filter(s) (Combined filters) in accordance with standard EN14387 : A2

Particle filter according to standard EN143 : P3

Thermal Hazards:

None

Environmental exposure controls:

It is recommended using all available means to prevent and regulate exposure in compliance with legal requirements.
Use all the appropriate means to keep suspended dust levels under exposure limits.

Appropriate engineering controls:
None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance and colour:	Liquid
Odour:	Solvent odor
Odour threshold:	N.A.
pH:	N.A.
Melting point / freezing point:	-71 °C
Initial boiling point and boiling range:	175 °C
Solid/gas flammability:	N.A.
Upper/lower flammability or explosive limits:	N.A.
Vapour density:	N.A.
Flash point:	60°C <= PE <= 93 °C
Evaporation rate:	N.A.
Vapour pressure:	N.A.
Relative density:	>1
Solubility in water:	N.A.
Solubility in oil:	N.A.
Partition coefficient (n-octanol/water):	N.A.
Auto-ignition temperature:	N.A.
Decomposition temperature:	N.A.
Viscosity:	N.A.
Explosive properties:	N.A.
Oxidizing properties:	N.A.

9.2. Other information

Miscibility:	N.A.
Fat Solubility:	N.A.
Conductivity:	N.A.
Substance Groups relevant properties:	N.A.

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

Stable under normal conditions

10.3. Possibility of hazardous reactions

Exposed to high temperatures, the mixture can release hazardous decomposition products.

10.4. Conditions to avoid

Flames and hot surfaces
The accumulation of electrostatic discharges
The heating
The heat
The humidity

10.5. Incompatible materials

Acids
Oxidizing agents
Bases
Water

10.6. Hazardous decomposition products

Nitrogen oxides
Carbon oxides

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:
N.A.
Toxicological information of the main substances found in the product:
hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat > 2500 mg/kg - Source: OCDE 423
Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg - Source: OCDE 402
Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg
Test: NOAEL - Route: Inhalation - Species: Rat = 3.3 mg/m3 - Source: OCDE 413
n-butyl acetate - CAS: 123-86-4
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat = 10760 mg/kg
Test: LC50 - Route: Inhalation Mist - Species: Rat = 23.4 mg/l - Duration: 4h
Test: LD50 - Route: Skin - Species: Rabbit > 14112 mg/kg
Test: LC50 - Route: Inhalation Vapour - Species: Rat > 21 mg/l - Duration: 4h
h) STOT-single exposure:
Test: Nervous system Positive
acetylacetone ; pentane-2,4-dione - CAS: 123-54-6
a) acute toxicity:
Test: LC50 - Route: Inhalation Vapour - Species: Rat = 5.1 mg/l - Duration: 4h
Test: LD50 - Route: Skin - Species: Rabbit = 790 mg/kg
Test: LD50 - Route: Oral - Species: Rat = 570 mg/kg
hexamethylene-di-isocyanate - CAS: 822-06-0
a) acute toxicity:
Test: LC50 - Route: Inhalation Vapour - Species: Rat = 0.124 mg/l - Duration: 4h
Test: LD50 - Route: Oral - Species: Rat = 746 mg/kg
Test: LD50 - Route: Skin - Species: Rat > 7000 mg/kg

If not differently specified, the information required in Regulation (EU)2015/830 listed below must be considered as N.A.:
a) acute toxicity;
b) skin corrosion/irritation;
c) serious eye damage/irritation;
d) respiratory or skin sensitisation;
e) germ cell mutagenicity;
f) carcinogenicity;
g) reproductive toxicity;
h) STOT-single exposure;
i) STOT-repeated exposure;
j) aspiration hazard.

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
a) Aquatic acute toxicity:
Endpoint: LC50 Fish > 100 mg/l - Duration h: 96
Endpoint: EC50 Daphnia > 100 mg/l - Duration h: 48
Endpoint: EC50 Algae > 1000 mg/l - Duration h: 72
Endpoint: EC50 Bacteria = 3828 mg/l - Duration h: 3
n-butyl acetate - CAS: 123-86-4
a) Aquatic acute toxicity:
Endpoint: LC50 Fish = 18 mg/l - Duration h: 96
Endpoint: EC50 Daphnia = 44 mg/l - Duration h: 48
Endpoint: EC50 Algae = 647.7 mg/l - Duration h: 72
Endpoint: NOEC Algae = 200 mg/l
Endpoint: CI50 Bacteria = 356 mg/l - Duration h: 40
Endpoint: CI50 Fish = 32 mg/l - Duration h: 48
acetylacetone ; pentane-2,4-dione - CAS: 123-54-6
a) Aquatic acute toxicity:
Endpoint: LC50 Fish = 104 mg/l - Duration h: 96
Endpoint: EC50 Daphnia = 25.9 mg/l - Duration h: 48
Endpoint: LC50 Daphnia = 47.6 mg/l - Duration h: 48
Endpoint: LC50 Fish = 60.1 mg/l - Duration h: 96

12.2. Persistence and degradability

hexamethylene diisocyanate, oligomers - CAS: 28182-81-2
Biodegradability: Non-readily biodegradable - Duration h: 28days - %: 1

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover if possible. In so doing, comply with the local and national regulations currently in force.
The codes for waste (Decision 2001/573/CE, Directive 2006/12/CEE, Directive 94/31/CEE on hazardous waste) :
08 01 11* waste paint and varnish containing organic solvents or other hazardous substances
15 01 10* packaging containing residues of or contaminated by hazardous substances
Additional disposal information:
Do not discharge into drains,water, nature.

SECTION 14: Transport information

14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

ADR-Enviromental Pollutant: No
IMDG-Marine pollutant: No

14.6. Special precautions for user

N.A.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) 2015/830
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/699 (ATP 11 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3
Restriction 40

Restrictions related to the substances contained:

No restriction.

Volatile Organic compounds - VOCs = 358.00 g/l
Volatile CMR substances = 0.00 %
Halogenated VOCs which are assigned the risk phrase R40 = 0.00 %

Organic Carbon - C = 0.00
Where applicable, refer to the following regulatory provisions :
Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):
Seveso III category according to Annex 1, part 1
None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:
H332 Harmful if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.
H226 Flammable liquid and vapour.
H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H331 Toxic if inhaled.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H315 Causes skin irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Hazard class and hazard category	**Code**	**Description**
Flam. Liq. 3	2.6/3	Flammable liquid, Category 3
Acute Tox. 1	3.1/1/Inhal	Acute toxicity (inhalation), Category 1
Acute Tox. 3	3.1/3/Dermal	Acute toxicity (dermal), Category 3
Acute Tox. 3	3.1/3/Inhal	Acute toxicity (inhalation), Category 3
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Resp. Sens. 1,1A,1B	3.4.1/1-1A-1B	Respiratory Sensitisation, Category 1,1A,1B
Skin Sens. 1	3.4.2/1	Skin Sensitisation, Category 1
Skin Sens. 1,1A,1B	3.4.2/1-1A-1B	Skin Sensitisation, Category 1,1A,1B
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3

Aquatic Chronic 3	4.1/C3	Chronic (long term) aquatic hazard, category 3

Paragraphs modified from the previous revision:

SECTION 1: Identification of the substance/mixture and of the company/undertaking
SECTION 2: Hazards identification
SECTION 3: Composition/information on ingredients
SECTION 7: Handling and storage
SECTION 8: Exposure controls/personal protection
SECTION 11: Toxicological information
SECTION 12: Ecological information
SECTION 13: Disposal considerations
SECTION 15: Regulatory information
SECTION 16: Other information

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	**Classification procedure**
Acute Tox. 4, H332	Calculation method
Skin Sens. 1, H317	Calculation method
STOT SE 3, H335	Calculation method

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:
ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold
The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.

INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.