Safety data sheet
according to Regulation (EC) No 1907/2006, Annex II

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

1.1 Product identifier

Refrigerant R134a

1,1,1,2-Tetrafluoroethane
Registration number (ECHA): 01-2119459374-33-XXXX
Index: ---
EINECS, ELINCS, NLP, REACH-IT List-No.: 212-377-0
CAS: 811-97-2

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

Relevant identified uses of the substance or mixture:

Refrigerant
Sector of use [SU]:
SU17 - General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment.
Chemical product category [PC]:
PC16 - Heat transfer fluids
Process category [PROC]:
PROC 1 - Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
PROC 5 - Mixing or blending in batch processes
PROC 8a - Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC 8b - Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC 9 - Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
PROC20 - Use of functional fluids in small devices
Article Categories [AC]:
AC 1 - Vehicles
AC 2 - Machinery, mechanical appliances, electrical/electronic articles
Environmental Release Category [ERC]:
ERC 2 - Formulation into mixture
ERC 9a - Widespread use of functional fluid (indoor)

Uses advised against:

No information available at present.

1.3 Details of the supplier of the safety data sheet

WAECO Germany WSE GmbH,
Hollefeldstr. 63, 48282 Emsdetten,
Germany
Tel +49 2572 879-0
waeco@dometic.com
waeco.com

GB

Dometic UK Ltd., Dometic House,
The Brewery, Blandford St. Mary,
Dorset DT11 9LS, United Kingdom,
Tel. +44 344 626 0133

Qualified person's e-mail address: info@chemical-check.de, k.schnurbusch@chemical-check.de Please DO NOT use for requesting Safety Data Sheets.

1.4 Emergency telephone number
Emergency information services / official advisory body:
IRL

National Poisons Information Centre, Beaumont Hospital, Dublin 9, Ireland, Tel.:
+353 (0)1 809 2166 (Public Poisons Info Line, 8am-10pm, 7 days a week)
+353 (0)1 809 2566 (Info for Healthcare Professionals ONLY, 24 h, 7 days a week)

Telephone number of the company in case of emergencies:
+49 (0) 700 / 24 112 112 (CCWA)
+1 872 5888271 (CCWA)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) 1272/2008 (CLP)

Hazard class	Hazard category	Hazard statement
Press. Gas	(Comp.)	H280-Contains gas under pressure, may explode if heated.

2.2 Label elements
Labeling according to Regulation (EC) 1272/2008 (CLP)

1,1,1,2-Tetrafluoroethane
CAS: 811-97-2, Index:---

Warning

H280-Contains gas under pressure, may explode if heated.

P410+P403-Protect from sunlight. Store in a well-ventilated place.

Contains fluorinated greenhouse gases.

2.3 Other hazards
No vPvB substance
No PBT substance
No substance with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.1 Substances

1,1,1,2-Tetrafluoroethane	
Registration number (REACH)	01-2119459374-33-XXXX
Index	---
EINECS, ELINCS, NLP, REACH-IT List-No.	212-377-0

CAS	811-97-2
content %	
Classification according to Regulation (EC) 1272/2008 (CLP), M-factors	---

3.2 Mixtures
n.a.

For the text of the H-phrases and classification codes (GHS/CLP), see Section 16.
The substances named in this section are given with their actual, appropriate classification!
For substances that are listed in appendix VI, table 3.1 of the regulation (EC) no. 1272/2008 (CLP regulation) this means that all notes that may be given here for the named classification have been taken into account.

SECTION 4: First aid measures

4.1 Description of first aid measures
First-aiders should ensure they are protected!
Never pour anything into the mouth of an unconscious person!

Inhalation
Remove person from danger area.
Supply person with fresh air. Call doctor immediately.
If the person is unconscious, place in a stable side position and consult a doctor.
Respiratory arrest - Artificial respiration apparatus necessary.
Keep affected persons warm.

Skin contact
Wash thoroughly using copious water - remove contaminated clothing immediately. If skin irritation occurs (redness etc.), consult doctor.
Cover frostbite aseptically.

Eye contact
Wash thoroughly for several minutes using copious water - call doctor immediately, have Data Sheet available.
Consult medical specialist.

Ingestion
Typically no exposure pathway.

4.2 Most important symptoms and effects, both acute and delayed
If applicable delayed symptoms and effects can be found in section 11 and the absorption route in section 4.1.
with long-term contact:
Product removes fat.
Dermatitis (skin inflammation)
At high concentrations:
Suffocating effect.
Disturbed heart rhythm
Death
Skin contact:
Frostbite
Eye contact:
Frostbite
Risk of serious damage to eyes.
Watering eyes
Corrosive burns on skin as well as mucous membrane possible.
In certain cases, the symptoms of poisoning may only appear after an extended period / after several hours.

4.3 Indication of any immediate medical attention and special treatment needed
Indications for the physician:
References
Corticosteroid controlled dosage aerosol
No administration of adrenaline-ephedrine preparations.
Inhalation of conflagration gases:
Pulmonary oedema prophylaxis

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Product is not combustible.
Adapt to the nature and extent of fire.

Unsuitable extinguishing media

None

5.2 Special hazards arising from the substance or mixture

In case of fire the following can develop:
Hydrofluoric acid
Toxic pyrolysis products.
Explosive mixtures of vapour and air may form.
Danger of bursting (explosion) when heated
Corrosive vapours
Room ventilation also at ground level.
suffocating effect.

5.3 Advice for firefighters

For personal protective equipment see Section 8.
Protective respirator with independent air supply.
Full protection
Fire fighting only at a safe distance
Water mist
Cool container at risk with water.
Dispose of contaminated extinction water according to official regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

In case of spillage or accidental release, wear personal protective equipment as specified in section 8 to prevent contamination.
Ensure sufficient ventilation, remove sources of ignition.
Avoid dust formation with solid or powder products.
Leave the danger zone if possible, use existing emergency plans if necessary.
Ensure sufficient ventilation.
Avoid inhalation, and contact with eyes or skin.
Vapours heavier than air.

6.1.2 For emergency responders

See section 8 for suitable protective equipment and material specifications.

6.2 Environmental precautions

If leakage occurs, dam up.
Resolve leaks if this possible without risk.
Prevent surface and ground-water infiltration, as well as ground penetration.
Prevent penetration into drains, cellars, working pits or other places in which accumulation could be hazardous.
If accidental entry into drainage system occurs, inform responsible authorities.

6.3 Methods and material for containment and cleaning up

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth) and dispose of according to Section 13.
Allow to evaporate.
If spray or gas escapes, ensure ample fresh air is available.

6.4 Reference to other sections

For personal protective equipment see Section 8 and for disposal instructions see Section 13.

SECTION 7: Handling and storage

In addition to information given in this section, relevant information can also be found in section 8 and 6.1.

7.1 Precautions for safe handling

7.1.1 General recommendations

Ensure good ventilation.
Room ventilation also at ground level.
Avoid inhalation of the vapours.
Avoid contact with eyes or skin.
Keep away from sources of ignition - Do not smoke.
Take precautions against electrostatic charges.
Do not use on hot surfaces.
Use as far as possible in closed circuit plants/systems.
Eating, drinking, smoking, as well as food-storage, is prohibited in work-room.
Observe directions on label and instructions for use.
Use working methods according to operating instructions.
Earth devices.
Avoid welding.

7.1.2 Notes on general hygiene measures at the workplace

General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

7.2 Conditions for safe storage, including any incompatibilities

Keep out of access to unauthorised individuals.
Store product closed and only in original packing.
Not to be stored in gangways or stair wells.
Do not store with highly flammable, flammable, or self-igniting materials.
Do not store with flammable or self-igniting materials.
Suitable container:
Steel
Stainless steel (alloy steel)
Unsuitable container:
Various plastics
Store in a well ventilated place.
Store cool.
Observe special regulations for gases.
Store cool.

7.3 Specific end use(s)

No information available at present.
Observe the instructions for good working practice and the recommendations for risk assessment.
Consult hazardous substance information systems, e.g. from the professional associations, the chemical industry or different industries,
depending on the application (building materials, wood, chemistry, laboratory, leather, metal).

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

GB **Chemical Name**	1,1,1,2-Tetrafluoroethane	
WEL-TWA: 1000 ppm (4240 mg/m3)	WEL-STEL: ---	---
Monitoring procedures:	---	
BMGV: ---	Other information: ---	

1,1,1,2-Tetrafluoroethane						
Area of application	**Exposure route / Environmental compartment**	**Effect on health**	**Descriptor**	**Value**	**Unit**	**Note**
	Environment - freshwater		PNEC	0,1	mg/l	
	Environment - marine		PNEC	0,01	mg/l	
	Environment - periodic release		PNEC	1	mg/l	

	Environment - sediment, freshwater		PNEC	0,75	mg/kg dw	
	Environment - sewage treatment plant		PNEC	73	mg/kg dw	
Consumer	Human - inhalation	Long term, systemic effects	DNEL	2476	mg/m3	
Workers / employees	Human - inhalation	Long term, systemic effects	DNEL	13936	mg/m3	

GB WEL-TWA = Workplace Exposure Limit - Long-term exposure limit (8-hour TWA (= time weighted average) reference period) EH40. AGW = "Arbeitsplatzgrenzwert" (workplace limit value, Germany).
(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). | WEL-STEL = Workplace Exposure Limit - Short-term exposure limit (15-minute reference period).
(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU). (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). | BMGV = Biological monitoring guidance value EH40. BGW = "Biologischer Grenzwert" (biological limit value, Germany) | Other information: Sen = Capable of causing occupational asthma. Sk = Can be absorbed through skin. Carc = Capable of causing cancer and/or heritable genetic damage.
** = The exposure limit for this substance is repealed through the TRGS 900 (Germany) of January 2006 with the goal of revision.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

IRL OELV-8h = Occupational Exposure Limit Value (8-hour reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.
(8) = Inhalable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (9) = Respirable fraction (Directive 2017/164/EU, Directive 2004/37/CE). (11) = Inhalable fraction (Directive 2004/37/CE). (12) = Inhalable fraction. Respirable fraction in those Member States that implement, on the date of the entry into force of this Directive, a biomonitoring system with a biological limit value not exceeding 0,002 mg Cd/g creatinine in urine (Directive 2004/37/CE). |
OELV-15min = Occupational Exposure Limit Value (15-minute reference period). (IFV) = Inhalable Fraction and Vapour. (I) = Inhalable Fraction. (R) = Respirable Fraction.
(8) = Inhalable fraction (2017/164/EU, 2017/2398/EU. (9) = Respirable fraction (2017/164/EU, 2017/2398/EU). (10) = Short-term exposure limit value in relation to a reference period of 1 minute (2017/164/EU). |
BLV = Biological limit value |
Other information: Carc1A, Carc1B = carcinogenic substance, Cat. 1A or 1B. Muta1A, Muta1B = mutagenic substance, Cat. 1A or 1B. Repr1A, Repr1B = Substances known to be toxic for reproduction, Cat. 1A or 1B. Sk = can be absorbed through skin. Asphx = asphyxiant. Sen = Respiratory sensitizer. BOELV = Binding Occupational Exposure Limit Values. IOELV = Indicative Occupational Exposure Limit Values.
(13) = The substance can cause sensitisation of the skin and of the respiratory tract (Directive 2004/37/CE), (14) = The substance can cause sensitisation of the skin (Directive 2004/37/CE).

8.2 Exposure controls
8.2.1 Appropriate engineering controls

Ensure good ventilation. This can be achieved by local suction or general air extraction.
If this is insufficient to maintain the concentration under the WEL or AGW values, suitable breathing protection should be worn.
Applies only if maximum permissible exposure values are listed here.
Suitable assessment methods for reviewing the effectiveness of protection measures adopted include metrological and non-metrological investigative techniques.
These are specified by e.g. EN 14042.
EN 14042 "Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents".

8.2.2 Individual protection measures, such as personal protective equipment
General hygiene measures for the handling of chemicals are applicable.
Wash hands before breaks and at end of work.
Keep away from food, drink and animal feedingstuffs.
Remove contaminated clothing and protective equipment before entering areas in which food is consumed.

Eye/face protection:

Tight fitting protective goggles (EN 166) with side protection, with danger of splashes.
Face protection (EN 166).

Skin protection - Hand protection: References
Chemical resistant protective gloves (EN ISO 374).
Recommended
Protective gloves made of polyvinyl alcohol (EN ISO 374).
If applicable
Insulating gloves EN 511 (cold).
Insulating gloves EN 407 (heat).

Skin protection - Other:
Protective working garments (e.g. safety shoes EN ISO 20345, long-sleeved protective working garments).
Recommended
Neoprene® / Polychloroprene
Apron
Boots, double-lined (protection from frostbite) (EN ISO 20347).

Respiratory protection:
If OES or MEL is exceeded.
Respiratory protection appliance (insulation device) (e.g. EN 137 or EN 138)
Observe wearing time limitations for respiratory protection equipment.

Thermal hazards:
If applicable, these are included in the individual protective measures (eye/face protection, skin protection, respiratory protection).

Additional information on hand protection - No tests have been performed.
In the case of mixtures, the selection has been made according to the knowledge available and the information about the contents.
Selection of materials derived from glove manufacturer's indications.
Final selection of glove material must be made taking the breakthrough times, permeation rates and degradation into account.
Selection of a suitable glove depends not only on the material but also on other quality characteristics and varies from manufacturer to manufacturer.
In the case of mixtures, the resistance of glove materials cannot be predicted and must therefore be tested before use.
The exact breakthrough time of the glove material can be requested from the protective glove manufacturer and must be observed.

8.2.3 Environmental exposure controls
No information available at present.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquefied gas
Colour:	Colourless
Odour:	Slightly
Odour:	Ether
Melting point/freezing point:	-26,3 °C (Setting point)
Boiling point or initial boiling point and boiling range:	-101 °C
Flammability:	Not combustible.
Lower explosion limit:	There is no information available on this parameter.
Upper explosion limit:	There is no information available on this parameter.
Flash point:	Does not apply to gases.
Auto-ignition temperature:	There is no information available on this parameter.
Decomposition temperature:	>370 °C
pH:	Substance is a gas.
Kinematic viscosity:	0,21 Pas (25°C, Dynamic viscosity)
Solubility:	1,15 g/l (25°C)
Partition coefficient n-octanol/water (log value):	1,06
Vapour pressure:	6,65 bar (25°C)
Vapour pressure:	13,18 bar (50°C)
Density and/or relative density:	1,21 g/ml (25°C)
Relative vapour density:	4,32 (20°C)

Particle characteristics: Does not apply to gases.

9.2 Other information

Explosives: There is no information available on this parameter.
Oxidising gases: No

SECTION 10: Stability and reactivity

10.1 Reactivity

See also Subsection 10.2 to 10.6.
The product has not been tested.

10.2 Chemical stability

See also Subsection 10.1 to 10.6.

10.3 Possibility of hazardous reactions

See also Subsection 10.1 to 10.6.
Avoid contact with other chemicals.

10.4 Conditions to avoid

See also section 7.
Heating, open flame, ignition sources
Pressure increase will result in danger of bursting.
Decomposition:
> 370°C

10.5 Incompatible materials

See also section 7.
Alkali metals
Magnesium
Aluminium
Zinc
Metals in powder form
Chlorine

10.6 Hazardous decomposition products

See also Subsection 10.1 to 10.5.
See also section 5.2
Hydrofluoric acid
Danger of explosion.
CF2O

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Possibly more information on health effects, see Section 2.1 (classification).

1,1,1,2-Tetrafluoroethane						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Acute toxicity, by oral route:						n.d.a.
Acute toxicity, by dermal route:						n.d.a.
Acute toxicity, by inhalation:	LC50	>2086	mg/l/4h			
Skin corrosion/irritation:						Mild irritant
Serious eye damage/irritation:						Mild irritant
Respiratory or skin sensitisation:				Guinea pig		Not sensitizising
Germ cell mutagenicity:						n.d.a.
Carcinogenicity:						n.d.a.
Reproductive toxicity:						n.d.a.
Specific target organ toxicity - single exposure (STOT-SE):						n.d.a.
Specific target organ toxicity - repeated exposure (STOT-RE):						n.d.a.

Aspiration hazard:						n.d.a.
Symptoms:						heart/circulatory disorders

11.2. Information on other hazards

1,1,1,2-Tetrafluoroethane						
Toxicity / effect	**Endpoint**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
Endocrine disrupting properties:						n.d.a.
Other information:						No other relevant information available on adverse effects on health.

SECTION 12: Ecological information

Possibly more information on environmental effects, see Section 2.1 (classification).

1,1,1,2-Tetrafluoroethane							
Toxicity / effect	**Endpoint**	**Time**	**Value**	**Unit**	**Organism**	**Test method**	**Notes**
12.1. Toxicity to fish:	LC50	96h	450	mg/l	Oncorhynchus mykiss		
12.1. Toxicity to daphnia:	EC50	48h	980	mg/l	Daphnia magna		
12.1. Toxicity to algae:	EC50	72h	>118	mg/l			
12.2. Persistence and degradability:		28d	3	%		OECD 301 D (Ready Biodegradability - Closed Bottle Test)	Not readily biodegradable
12.3. Bioaccumulative potential:	Log Pow		1,06				25°C
12.4. Mobility in soil:	Log Koc		~ 1,5				Product is slightly volatile., calculated value
12.5. Results of PBT and vPvB assessment							n.d.a.
12.6. Endocrine disrupting properties:							n.d.a.
12.7. Other adverse effects:							n.d.a.
Toxicity to bacteria:	EC10	6h	>730	mg/l	Pseudomonas putida		
Other information:	AOX		100	%			
Ozone depletion potential (ODP):			0				Does not degrade ozone.
Water solubility:			1	g/l			25°C

SECTION 13: Disposal considerations

13.1 Waste treatment methods
For the substance / mixture / residual amounts

EC disposal code no.:
The waste codes are recommendations based on the scheduled use of this product.
Owing to the user's specific conditions for use and disposal, other waste codes may be allocated under certain circumstances. (2014/955/EU)
16 05 04 gases in pressure containers (including halons) containing hazardous substances

14 06 01 chlorofluorocarbons, HCFC, HFC
Recommendation:
Sewage disposal shall be discouraged.
Pay attention to local and national official regulations.
E.g. suitable incineration plant.

For contaminated packing material

Pay attention to local and national official regulations.
Recommendation:
Return to manufacturer with residual pressure.
15 01 04 metallic packaging

SECTION 14: Transport information

General statements

Transport by road/by rail (ADR/RID)

14.1. UN number or ID number:	3159
14.2. UN proper shipping name:	
UN 3159 1,1,1,2-TETRAFLUOROETHANE	
14.3. Transport hazard class(es):	2.2
14.4. Packing group:	-
14.5. Environmental hazards:	Not applicable
Tunnel restriction code:	C/E
Classification code:	2A
LQ:	120 ml
Transport category:	3

Transport by sea (IMDG-code)

14.1. UN number or ID number:	3159
14.2. UN proper shipping name:	
UN 3159 REFRIGERANT GAS R 134a	
14.3. Transport hazard class(es):	2.2
14.4. Packing group:	-
14.5. Environmental hazards:	Not applicable
Marine Pollutant:	Not applicable
EmS:	F-C, S-V

Transport by air (IATA)

14.1. UN number or ID number:	3159
14.2. UN proper shipping name:	
UN 3159 Refrigerant gas R 134a	
14.3. Transport hazard class(es):	2.2
14.4. Packing group:	-
14.5. Environmental hazards:	Not applicable

14.6. Special precautions for user

Persons employed in transporting dangerous goods must be trained.
All persons involved in transporting must observe safety regulations.
Precautions must be taken to prevent damage.

14.7. Maritime transport in bulk according to IMO instruments

Freighted as packaged goods rather than in bulk, therefore not applicable.
Minimum amount regulations have not been taken into account.
Danger code and packing code on request.
Comply with special provisions.

SECTION 15: Regulatory information

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

Observe restrictions:
For products and equipment containing fluorinated greenhouse gases, please note Regulation (EU) No 517/2014 and Implementing Regulation (EU) 2015/2068.

Comply with national regulations/laws governing the protection of young people at work (national implementation of the Directive 94/33/EC)!
Comply with trade association/occupational health regulations.

Observe incident regulations.

National requirements/regulations on safety and health protection must be applied when using work equipment.

15.2 Chemical safety assessment
There is no chemical safety report available.

SECTION 16: Other information

Revised sections: 1
Observe special regulations for gases.
Employee training in handling dangerous goods is required.
These details refer to the product as it is delivered.
Employee instruction/training in handling hazardous materials is required.
The following phrases represent the posted Hazard Class and Risk Category Code (GHS/CLP) of the product and the constituents (specified in Section 2 and 3).

Press. Gas (Comp.) — Gases under pressure-Compressed gas

Key literature references and sources for data:
Regulation (EC) No 1907/2006 (REACH) and Regulation (EC) No 1272/2008 (CLP) as amended.
Guidelines for the preparation of safety data sheets as amended (ECHA).
Guidelines on labelling and packaging according to the Regulation (EG) Nr. 1272/2008 (CLP) as amended (ECHA).
Safety data sheets for the constituent substances.
ECHA Homepage - Information about chemicals.
GESTIS Substance Database (Germany).
German Environment Agency "Rigoletto" information site on substances that are hazardous to water (Germany).
EU Occupation Exposure Limits Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164, (EU) 2019/1831, each as amended.
National Lists of Occupational Exposure Limits for each country as amended.
Regulations on the transport of hazardous goods by road, rail, sea and air (ADR, RID, IMDG, IATA) as amended.

Any abbreviations and acronyms used in this document:

acc., acc. to according, according to
ADR Accord européen relatif au transport international des marchandises Dangereuses par Route (= European Agreement concerning the International Carriage of Dangerous Goods by Road)
AOX Adsorbable organic halogen compounds
approx. approximately
Art., Art. no. Article number
ASTM ASTM International (American Society for Testing and Materials)
ATE Acute Toxicity Estimate
BAM Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing, Germany)
BAuA Bundesanstalt für Arbeitsschutz und Arbeitsmedizin (= Federal Institute for Occupational Health and Safety, Germany)
BCF Bioconcentration factor
BSEF The International Bromine Council
bw body weight
CAS Chemical Abstracts Service
CLP Classification, Labelling and Packaging (REGULATION (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures)
CMR carcinogenic, mutagenic, reproductive toxic
DMEL Derived Minimum Effect Level
DNEL Derived No Effect Level
DOC Dissolved organic carbon
dw dry weight

e.g. for example (abbreviation of Latin 'exempli gratia'), for instance
EbCx, EyCx, EbLx (x = 10, 50) Effect Concentration/Level of x % on reduction of the biomass (algae, plants)
EC European Community
ECHA European Chemicals Agency
ECx, ELx (x = 0, 3, 5, 10, 20, 50, 80, 100) Effect Concentration/Level for x % effect
EEC European Economic Community
EINECS European Inventory of Existing Commercial Chemical Substances
ELINCS European List of Notified Chemical Substances
EN European Norms
EPA United States Environmental Protection Agency (United States of America)
ErCx, EμCx, ErLx (x = 10, 50) Effect Concentration/Level of x % on inhibition of the growth rate (algae, plants)
etc. et cetera
EU European Union
EVAL Ethylene-vinyl alcohol copolymer
Fax. Fax number
gen. general
GHS Globally Harmonized System of Classification and Labelling of Chemicals
GWP Global warming potential
Koc Adsorption coefficient of organic carbon in the soil
Kow octanol-water partition coefficient
IARC International Agency for Research on Cancer
IATA International Air Transport Association
IBC (Code) International Bulk Chemical (Code)
IMDG-code International Maritime Code for Dangerous Goods
incl. including, inclusive
IUCLID International Uniform Chemical Information Database
IUPAC International Union for Pure Applied Chemistry
LC50 Lethal Concentration to 50 % of a test population
LD50 Lethal Dose to 50% of a test population (Median Lethal Dose)
Log Koc Logarithm of adsorption coefficient of organic carbon in the soil
Log Kow, Log Pow Logarithm of octanol-water partition coefficient
LQ Limited Quantities
MARPOL International Convention for the Prevention of Marine Pollution from Ships
n.a. not applicable
n.av. not available
n.c. not checked
n.d.a. no data available
NIOSH National Institute for Occupational Safety and Health (USA)
NLP No-longer-Polymer
NOEC, NOEL No Observed Effect Concentration/Level
OECD Organisation for Economic Co-operation and Development
org. organic
OSHA Occupational Safety and Health Administration (USA)
PBT persistent, bioaccumulative and toxic
PE Polyethylene
PNEC Predicted No Effect Concentration
ppm parts per million
PVC Polyvinylchloride
REACH Registration, Evaluation, Authorisation and Restriction of Chemicals (REGULATION (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals)
REACH-IT List-No. 9xx-xxx-x No. is automatically assigned, e.g. to pre-registrations without a CAS No. or other numerical identifier. List Numbers do not have any legal significance, rather they are purely technical identifiers for processing a submission via REACH-IT.
RID Règlement concernant le transport International ferroviaire de marchandises Dangereuses (= Regulation concerning the International Carriage of Dangerous Goods by Rail)
SVHC Substances of Very High Concern
Tel. Telephone
TOC Total organic carbon
UN RTDG United Nations Recommendations on the Transport of Dangerous Goods
VOC Volatile organic compounds
vPvB very persistent and very bioaccumulative
wwt wet weight

The statements made here should describe the product with regard to the necessary safety precautions - they are not meant to guarantee definite characteristics - but they are based on our present up-to-date knowledge.
No responsibility.
These statements were made by:

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