N-BUTANOL

Version: *10*.01 **Revision Date 2019/06/11**

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name	**N-BUTANOL**
REACH No.	01-2119484630-38-0001
Substance name (REACH / CLP)	Butan-1-ol

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

Use	Industrial use raw material for synthesis processes in the chemical industry Solvent
Uses advised against	

1.3 Details of the supplier of the safety data sheet

Company	Sasol Solvents Germany GmbH Anckelmannsplatz 1 20537 Hamburg Germany Telephone: +49 40 63684-1000 Telefax: +49 40 63684-3700
Information (Product safety):	Telephone: + 49 (0) 23 65 - 49 47 05 Telefax: + 49 (0) 23 65 - 49 92 40
E-mail address	solvents.germany.msds@de.sasol.com

1.4 Emergency telephone number

Emergency telephone number	+44 (0)1235 239 670 (Europe, Israel, Africa, Americas) +44 (0)1235 239 671 (Middle East, Arabic African countries) +65 3158 1074 (Asia Pacific) +86 10 5100 3039 (China) +27 (0)17 610 4444 (South Africa) +61 (2)8014 4558 (Australia)

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids Category 3	Flammable liquid and vapour.
Acute toxicity Category 4 (Oral)	Harmful if swallowed.
Skin irritation Category 2	Causes skin irritation.
Serious eye damage Category 1	Causes serious eye damage.
Specific target organ toxicity - single exposure Category 3 (Respiratory system)	May cause respiratory irritation.
(Central nervous system)	May cause drowsiness or dizziness.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word Danger

Hazard statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Precautionary statements

P243	Take precautionary measures against static discharge.
P301 + P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

No information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a substance in the meaning of regulation (EC) 1907/2006.

COMPONENTS TO BE NAMED IN ACCORDANCE WITH REGULATION (EC) 1907/2006 AS WELL AS OTHER HAZARDOUS INGREDIENTS AND CONTAINED SUBSTANCES WITH WORK PLACE LIMIT VALUES

butan-1-ol; n-butanol

content: <= 100 % **component type:** Active ingredient

EC-No.: 200-751-6 **Index-No.:** 603-004-00-6 **CAS-No.:** 71-36-3
REACH No.: 01-2119484630-38-0001
Substance name (REACH / CLP): butan-1-ol

Classification (Regulation (EC) No 1272/2008):	Flam. Liq. 3	H226
	Acute Tox. 4 (Oral)	H302
	Skin Irrit. 2	H315
	Eye Dam. 1	H318
	STOT SE 3	H335
	STOT SE 3	H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General advice	If you feel unwell, seek medical advice (show the label where possible). Take off all contaminated clothing immediately. Consult a physician for severe cases.
If inhaled	Provide fresh air. Monitor breathing, seek medical advice immediately.
In case of skin contact	Wash off immediately with soap and plenty of water.
In case of eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Protect unharmed eye.
If swallowed	Do NOT induce vomiting. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed	Symptoms: No information available. Risks: No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Indication of any immediate medical attention and special treatment needed	Treatment: No information available.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Water spray, Dry powder, Alcohol-resistant foam, Carbon dioxide (CO2)

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting	Dangerous gases or fumes may occur in case of fire.

5.3 Advice for firefighters

Special protective equipment for firefighters	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.
Further information	Use water spray to cool unopened containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	Ensure adequate ventilation. Keep away from sources of ignition - No smoking. Use personal protective equipment.

6.2 Environmental precautions

Environmental precautions	Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling	Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Take precautionary measures against static discharges.
Advice on protection against fire and explosion	Take precautionary measures against static discharges. Use only explosion-proof equipment. Handle product only in closed system or provide appropriate exhaust ventilation at machinery. Keep away from sources of ignition - No smoking.
Fire-fighting class	B: Fires involving liquids or liquid containing substances. Also includes substances which become liquid at elevated temperatures.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Keep containers tightly closed in a cool, well-ventilated place.
Storage class (TRGS 510)	3: Flammable Liquids
Other data	Stable under normal conditions.
container material	unsuitable materials: Aluminium

7.3 Specific end use(s)

Specific use(s)	This information is not available.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

National occupational exposure limits

Control parameters / Substance name	Typ	Control parameters	Update	Basis
BUTAN-1-OL	STEL STEL	154 mg/m3 50 ppm	12 2011 12 2011	EH40 WEL
	Can be absorbed through the skin.			

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

No data available

DERIVED NO EFFECT LEVEL (DNEL)

Substance name: butan-1-ol			
End Use	**Exposure routes**	**Value**	**Note**
Workers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, long-term exposure - systemic effects		Not relevant / Not applicable
	dermal, long-term exposure - local effects		Not relevant / Not applicable
	Inhalation, long-term exposure - local effects	310 mg/m3	
Consumers	dermal, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	Oral, Acute/short-term exposure - systemic effects		Not relevant / Not applicable
	dermal, Acute/short-term exposure - local effects		Not relevant / Not applicable
	Inhalation, Acute/short-term exposure - local effects		Not relevant / Not applicable
	dermal, long-term exposure - systemic effects		Not relevant / Not applicable
	Inhalation, long-term exposure - systemic effects		Not relevant / Not applicable

	Oral, long-term exposure - systemic effects	3.125 mg/kg	based on body weight and day
	dermal, long-term exposure - local effects		Not relevant / Not applicable
	Inhalation, long-term exposure - local effects	55 mg/m3	

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance name: butan-1-ol		
Environmental Compartment	**Value**	**Note**
Fresh water	0.082 mg/l	
Marine water	0.0082 mg/l	
intermittent release	2.25 mg/l	
treatment plant	2476 mg/l	
Fresh water sediment	0.178 mg/kg	based on dry weight
Marine sediment	0.0178 mg/kg	based on dry weight
Soil	0.015 mg/kg	based on dry weight
food		Not relevant / Not applicable

8.2 Exposure controls

ENGINEERING MEASURES

Provide sufficient air exchange and/or exhaust in work rooms.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection

In inadequately ventilated areas, where workplace limits are exceeded, where unpleasant odours exist or where aerosols are in use, or smoke and mist occur, use self-contained breathing apparatus or breathing apparatus with a type A filter or appropriate combined filter (e.g. where aerosols are in use, or smoke and mist occur, A-P2 or ABEK-P2), in compliance with EN 141.

Hand protection

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other., Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time., Be aware that in daily use the durability of a chemical resistant protective glove can be notably shorter than the break through time measured according to EN 374, due to the numerous outside influences (e.g. temperature).

gloves suitable for permanent contact:

Material: Nitrile rubber/nitrile latex
Break through time: >= 480 min
Layer thickness: 0.35 mm

Material: butyl-rubber
Break through time: >= 480 min
Layer thickness: 0.5 mm

gloves suitable for splash protection:

Material: Polychloroprene
Break through time: >= 240 min
Layer thickness: 0.5 mm

unsuitable gloves
Material: Natural rubber/natural latex, Polyvinylchloride

Eye protection	Tightly fitting safety goggles
Skin and body protection	Protective suit
Hygiene measures	Avoid contact with the skin and the eyes. Use barrier cream regularly. Provide adequate ventilation. Wear suitable gloves and eye/face protection.
Protective measures	General industrial hygiene practice.

ENVIRONMENTAL EXPOSURE CONTROLS

General advice	Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid; 20 °C; 1,013 hPa
Form	liquid
Colour	colourless
Odour	alcohol-like
Odour Threshold	No valid method available
pH	No data available
Melting point/range	-90 °C; 1,013 hPa
Boiling point/boiling range	119 °C; 1,013 hPa
Flash point	35 °C; 1,013 hPa
Evaporation rate	No data available
Flammability (solid, gas)	not applicable (liquid)
Lower explosion limit	1.4 %(V)
Upper explosion limit	11.3 %(V)
Vapour pressure	ca. 10 hPa; 20 °C
Relative vapour density	> 1
Density	ca.0.81 g/cm3; 20 °C
Water solubility	ca. 66 g/l; 20 °C
Partition coefficient: n-octanol/water	log Pow: 1; 25 °C
Ignition temperature	No data available

Auto-ignition temperature	355 °C; 1,013 hPa
Viscosity, dynamic	ca. 2.95 mPas; 20 °C
Explosive properties	Not explosive
Oxidizing properties	not expected based on structure and functional groups

9.2 Other data

Refractive index	1.399 at 20 °C
Additional advice	no data

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Note	No decomposition if stored and applied as directed.

10.2 Chemical stability

Note	No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	Vapour/air-mixtures are explosive at intense warming.

10.4 Conditions to avoid

Conditions to avoid	Direct heating, dirt, chemical contamination, sunlight, UV or ionising radiation.

10.5 Incompatible materials to avoid

Materials to avoid	Aluminium; Acid chlorides; Oxidizing agents; Reducing agents

10.6 Hazardous decomposition products

Hazardous decomposition products	No decomposition if stored normally.
Thermal decomposition	No decomposition if used as directed.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	butan-1-ol; n-butanol: Derived from the classification according to Annex VI of Regulation (EC) 1272/2008. Harmful if swallowed.
Acute inhalation toxicity	butan-1-ol; n-butanol: LC0 Rat: > 17.76 mg/l; 4 h; OECD Test Guideline 403 Test atmosphere: vapour Target Organs: Lungs Symptoms: reduced body weight gain

(literature value)
Based on available data, the classification criteria are not met.

Acute dermal toxicity

butan-1-ol; n-butanol:
LD50 Rat: > 2,000 mg/kg; OECD Test Guideline 402
Symptoms: reduced body weight gain
(literature value)
Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Skin irritation

butan-1-ol; n-butanol:
Rabbit: irritating
(literature value)
Causes skin irritation.

Serious eye damage/eye irritation

Eye irritation

butan-1-ol; n-butanol:
Rabbit: Irreversible effects on the eye; OECD Test Guideline 405
(literature value)
Causes serious eye damage.

Respiratory or skin sensitisation

Sensitisation

butan-1-ol; n-butanol:
Maximisation Test Guinea pig: not sensitizing; OECD Test Guideline 406
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: propan-1-ol

butan-1-ol; n-butanol:
not sensitizing; QSAR
(literature value)
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity in vitro

butan-1-ol; n-butanol:
In vitro tests did not show mutagenic effects
(literature value)

Genotoxicity in vivo

butan-1-ol; n-butanol:
In vivo tests did not show mutagenic effects
(literature value)

Remarks

butan-1-ol; n-butanol:
Based on available data, the classification criteria are not met.

Carcinogenicity

Carcinogenicity

butan-1-ol; n-butanol:
The substance has been shown to be not genotoxic, therefore it is not expected to have a carcinogenic potential.

Reproductive toxicity

Reproductive toxicity

butan-1-ol; n-butanol:
Two-generation reproductive toxicity: Rat; Inhalation; 153-day; OECD Test Guideline 416
(literature value)
The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).
Test substance: n-butyl acetate

RemarksReproductive toxicity

butan-1-ol; n-butanol:
Based on available data, the classification criteria are not met.

Teratogenicity	butan-1-ol; n-butanol: Rat; Oral NOAEL: 5,654 mg/kg (based on body weight and day) NOAEL (pregnant female): 5,654 mg/kg (based on body weight and day) (literature value)
Remarks-Teratogenicity	butan-1-ol; n-butanol: Based on available data, the classification criteria are not met.

STOT - single exposure

Remarks	butan-1-ol; n-butanol: May cause respiratory irritation. butan-1-ol; n-butanol: May cause drowsiness or dizziness.

STOT - repeated exposure

Remarks	butan-1-ol; n-butanol: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Repeated dose toxicity	butan-1-ol; n-butanol: Rat; Oral; Subchronic toxicity NOAEL: 125 mg/kg (based on body weight and day) Target Organs: Central nervous system Symptoms: Drowsiness (literature value)

Aspiration hazard

Aspiration toxicity	butan-1-ol; n-butanol: Not applicable

Toxicological information	butan-1-ol; n-butanol: Toxicokinetics The substance is readily absorbed through skin, intestinal tract and lungs. The substance is uniformly distributed throughout the organism. The substance is rapidly eliminated from the body. The main route of excretion is expired air as carbon dioxide.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	butan-1-ol; n-butanol: LC50 (96 h) Pimephales promelas (fathead minnow): > 100 mg/l ; static test; OECD Test Guideline 203 (literature value)
Toxicity to fish - Chronic toxicity	butan-1-ol; n-butanol: The study is not necessary.
Toxicity to daphnia and other aquatic invertebrates	butan-1-ol; n-butanol: EC50 (48 h) Daphnia magna (Water flea): > 100 mg/l ; static test; OECD Test Guideline 202 (literature value)
Toxicity to daphnia and other aquatic invertebrates - Chronic toxicity	butan-1-ol; n-butanol: NOEC (21 d) Daphnia magna (Water flea): > 1 - 10 mg/l; reproduction rate; semi-static test; OECD Test Guideline 211; (literature value)

Toxicity to aquatic plants	butan-1-ol; n-butanol: EC50 (96 h) Selenastrum capricornutum (green algae): > 100 mg/l ; static test; OECD Test Guideline 201; (literature value)
Toxicity to bacteria	butan-1-ol; n-butanol: EC10 (17 h) Pseudomonas putida: > 100 mg/l; Cell multiplication inhibition test; DIN 38 412 Part 8 (literature value)
Toxicity to soil dwelling organisms	butan-1-ol; n-butanol: The study is not necessary. Direct exposure to soil is unlikely.
Toxicity to terrestrial flora	butan-1-ol; n-butanol: The study is not necessary. unlikely direct and indirect exposure of the soil compartment
Toxicity for other terrestrial non-mammalian fauna	butan-1-ol; n-butanol: The study is not necessary. unlikely direct and indirect exposure of the soil compartment Accumulation in terrestrial organisms is unlikely.

12.2 Persistence and degradability

Biodegradability	butan-1-ol; n-butanol: Readily biodegradable.; > 60 %; 20 d; aerobic (literature value)

12.3 Bioaccumulative potential

Bioaccumulation	butan-1-ol; n-butanol: Bioconcentration factor (BCF): 3.16; calculated Bioaccumulation is unlikely.

12.4 Mobility in soil

Mobility	butan-1-ol; n-butanol: Adsorption/Soil; Koc: 2.443; log Koc: 0.388; calculated Highly mobile in soils Not expected to adsorb on soil.

12.5 Results of PBT and vPvB assessment

Results of PBT assessment	butan-1-ol; n-butanol: This substance is not considered to be persistent, bioaccumulating and toxic (PBT). Based on available data, the classification criteria are not met.

12.6 Other adverse effects

General advice	butan-1-ol; n-butanol: None known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product	Can be disposed of as a solid waste or burned in a suitable installation subject to local regulations.
waste code of the European Union: EWC	A waste code in accordance with the European Waste Catalogue (EWC) may not be assigned to this product since it admits of a classification only when the consumer uses it for some purpose. The waste code must be determined in agreement with the regional waste disposal authority or company.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR	1120
RID	1120
ADN	1120
IMDG	1120
ICAO/IATA	1120

14.2 Proper shipping name

ADR	BUTANOLS
RID	BUTANOLS
ADN	BUTANOLS
IMDG	BUTANOLS
ICAO/IATA	BUTANOLS

14.3 Transport hazard class

ADR	3
RID	3
ADN	3
IMDG	3
ICAO/IATA	3

14.4 Packing group

ADR	III
RID	III
ADN	III
IMDG	III
ICAO/IATA	III

14.5 Environmental hazards

ADR	Environmentally hazardous	no
RID	Environmentally hazardous	no
ADN	Environmentally hazardous	no
IMDG	Marine pollutant	no
ICAO/IATA	Environmentally hazardous	no

14.6 Special precautions for user

ADR	Hazard Identification Number		30
	Labels		3
	Tunnel restriction code		(D/E)
IMDG	Labels 3		
	EmS Number 1	F-E	
	EmS Number 2	S-D	
ICAO/IATA	Labels	3	

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category	Z
Remarks	MARPOL NAME: n-Butyl alcohol

SECTION 15: REGULATORY INFORMATION

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

Occupational restrictions Employment restrictions for children and young workers in accordance with Directive 94/33/EC and the respective national provisions are to be observed.

NATIONAL/OTHER REGULATIONS

NOTIFICATION STATUS

Switzerland. Consolidated Inventory	CH INV	listed (product or constituents are listed)
US. Toxic Substances Control Act	TSCA	listed (product or constituents are listed)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL)	DSL	listed (product or constituents are listed)
Australia. Industrial Chemical (Notification and Assessment) Act	AICS	listed (product or constituents are listed)
Japan. Kashin-Hou Law List	ENCS (JP)	listed (product or constituents are listed)
Japan. Industrial Safety & Health Law (ISHL) List	ISHL (JP)	listed (product or constituents are listed)
Korea. Existing Chemicals Inventory (KECI)	KECI (KR)	listed (product or constituents are listed)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	PICCS (PH)	listed (product or constituents are listed)
China. Inventory of Existing Chemical Substances (IECSC)	INV (CN)	listed (product or constituents are listed)

Please note: the names and CAS numbers which are used for this product in the stated inventories may deviate from the information which is listed in chapter 3.

15.2 Chemical safety assessment

butan-1-ol

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Further information:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.
This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

Key or legend to abbreviations and acronyms used in the safety data sheet

ADN	Accord européen relatif au transport international des marchandises dangereuses par voie de navigation intérieure
ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
AICS	Australian Inventory of Chemical Substances
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials (US)
BCF	Bioconcentration factor
CLP	Regulation on Classification, Labelling and Packaging of Substances and Mixtures
DIN	Deutsches Institut für Normung
DNEL	Derived No-Effect Level
DSL	Domestic Substances List
EC…	Effect concentration ... %
ENCS	Existing Notified Chemical Substances (Japan)
EWC	European Waste Catalogue
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods
IMO	International Maritime Organization
ISHL	Industrial Safety and Health Law (Japan)
ISO	International Organization for Standardization
IUAPC	International Union of Pure and Applied Chemistry
KECI	Korea Existing Chemicals Inventory
LC…	Lethal Concentration, ...%
LD…	Lethal Dose, ...%
MARPOL	International Convention for the Prevention of Pollution From Ships
NDSL	Non-Domestic Substances List
NOAEL	no observable adverse effect level
NOEL/NOEC	No Observed-effect level/concentration
NZIoC	New Zealand Inventory of Chemicals
OECD	Organisation for Economic Co-operation and Development
PBT	persistent, bioaccumulative, toxic
PICCS	Philippine Inventory of Chemicals and Chemical Substances
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport international ferroviaire de marchandises dangereuses
TG	Test Guideline
TRGS	Technische Regeln für Gefahrstoffe
TSCA	Toxic Substances Control Act
vPvB	very persistent, very bioaccumulative
WGK	Wassergefährdungsklasse

Annex

Attachments to the safety data sheet and/or lists of the identified uses for the listed substances can be downloaded using the internet links below.

http://www.sasolgermany.de/fileadmin/doc/productsafety/Annex/000000008987_EN_01.pdf