

MATERIAL SAFETY DATA SHEET

According to regulation (EC) Nr. 1907/2006

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

1.1 Product Identifier



Trade name: SURVOS Standard

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

Use of the substance/mixture: Industrial use

Uses advised against: At this moment we have not identified any uses advised against

1.3 Details of the distributor of the safety data sheet

Company: Carbide Related Technologies, Inc.

355 Sackett Point Road Unit 5

North Haven, CT 06473

Telephone: +1 203-281-1266

Email address: mlee@carbiderelatedtech.com

1.4 Emergency telephone number

Emergency telephone number: (203)281-1266

2 Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) 1272/2008

| Regulation (EC) Nr. 1272/2008 | | | |
|-------------------------------|-----------------|---------------|-------------------|
| Hazard class | Hazard category | Target organs | Hazard statements |
| Aspiration hazard | Category 1 | --- | H304 |

For a full text of H-statements mentioned in this section, see section 16.

Classification according to EU directives 67/548/EEC or 1999/45/EC

| Directive 67/548/EEC or 1999/45/EC | |
|------------------------------------|--------------|
| Harmful symbol/Category of danger | Risk phrases |
| Harmful (Xn) | R65 |
| | R66 |

For the full text of R-phrases mentioned in this section, see section 16.

Most important adverse effects:

Human Health: See section 11 for toxicological information.
 Physical and Chemical hazards: See section 9 for physiochemical information.
 Potential environment effects: See section 12 for environmental information.

2.2 Label elements

Labeling according to Regulation (EC) No. 1272/2008

Hazard Symbols:



Signal word: Danger

Hazard

Statements: H304 (may be fatal if swallowed and enters airways)

Response: P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P331: DO NOT induce vomiting.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/container to an approved waste disposal plant.

Additional Labeling:

EUH066: Repeated exposure may cause skin dryness or cracking.

Hazardous components which must be listed on the label:



- Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics
- Hydrocarbons, C10-C13, isoalkanes, cyclics, <3% aromatics

2.3 Other Hazards

For results of PBT and vPvB assessment see section 12.5

3 Composition/information on ingredients

3.1 Mixtures

Chemical nature: Preparation consisting of the following components.

| Hazard components | Amount [%] | Classification (REGULATION (EC) No. 1272/2008) Hazard class/category statements | Hazard | Classification (67/548/EEC) |
|---|------------|---|--------------|-----------------------------|
| Hydrocarbons, C10-C13, n-alkanes, isoalkanes, cyclics, <2% aromatics EC-No.: 918-481-9 >=25 - < 50 Asp. Tox.1 Registration: 01-2119457279-39-xxxx | | | H304 | Harmful, Xn; R65, R66 |
| Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics EC-No.: 918-317-6 >=25 - < 50 Asp. Tox.1 Registration: 01-2119474196-32-xxxx Aquatic Chronic 3 | | | H304 H412 | Harmful, Xn; R65 R66 |
| 2-(2-butoxyethoxy) ethanol INDEX-Nr.: 603-096-00-8 CAS-Nr.: 112-34-5 EC-Nr.: 203-961-6 >=7- <10 Eye Irrit. 2 C&L- Nr.: 02-2119751533-40-0000 | | | H319 | Irritant; Xi; R36 |

Remarks: Benzene content < 0,1%

For full text of the R-phrases mentioned in this Section, see Section 16

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

4 First aid measures

4.1 Descriptions of first aid measures

General Advice: Move out of dangerous areas. Take off all contaminated clothing immediately.

If inhaled: Move to fresh air - If not breathing. If breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Consult a physician after significant exposure. If unconscious place in recovery position and see medical advice.



- In case of skin contact: Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
- In case of eye contact: Rinse immediately with plenty of water, also tender the eyelids, for at least 10 minutes. Consult a physician.
- If swallowed: Rinse mouth with water. Do NOT induce vomiting. Risk of aspiration! Call a physician immediately. If a person vomits when lying on his/her back, place him or her in the recovery position.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms: Drowsiness
- Effects: Aspiration hazard if swallowed – can enter lungs and cause damage. Aspiration may cause pulmonary edema and pneumonitis.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment: Treat symptomatically

5 Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media: High volume water jet

5.2 Special hazards arising from the substance of mixture

- Specific hazards during Firefighting: Combustible liquid. In case of fire hazardous decomposition products may be produced such as: Carbon monoxide, Carbon dioxide (CO₂)

5.3 Advice for firefighting

- Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Wear appropriate body protection (full protective suit).
- Further information: Cool used containers exposed to fire with water spray. Collect contaminated fire extinguishing water separately. This must not be discharged into drains.



6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment. Keep away unprotected persons. Provide adequate ventilation. Keep away from heat and sources of ignition. Avoid contact with skin and eyes. Do not breathe gas/fumes/vapor/spray.

6.2 Environment precautions

Environmental precautions: Do not flush into surfaces water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Avoid subsoil penetration. If material reaches soil inform authorities responsible for such cases.

6.3 Methods and materials for containment and cleaning up

Methods and material for containment and cleaning up: Ensure adequate ventilation. Absorb with liquid-binding material (sand, diatomite, acid binders, and universal binders). Treat recovered material as described in the section "Disposal and consideration".

6.4 Reference to other sections

For personal protection see section 8

7 Handling and storage

7.1 Precautions for safe handling

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. Vapors are heavier than air and may spread along floors. Avoid contact with skin, eyes and clothing.

Hygiene measures: Take off all contaminated clothing immediately. Do not breathe gas/fumes/vapor/spray. Avoid contact with the skin and the eyes. Keep away from food, drink and animal feeding stuff. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities



Requirements for storage areas and containers: Keep in area equipped with solvent resistant flooring. Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Advice on protection against fire and explosion: Combustible liquid; Possible formation of ignitable mixture in air if heated above flash point and/or if sprayed (atomized). Keep away from sources of ignition – No smoking. Take measures to prevent the build-up of electrostatic charge.

Advice on common storage: Keep away from oxidizing agents.

German Storage Class: 10 combustible liquids

7.3 Specific end use(s)

Specific use(s): No information available

8 Exposure controls/personal protection

8.1 Control parameters

| | |
|--|-------------------|
| Component: 2- (2-butoxyethoxy) ethanol | CAS- No. 112-34-5 |
| Other occupational exposure limit values | |

EU ELV, Time Weighted Average (TWA):
10 ppm, 67.5 mg/m³
Indicative

EU ELV, Short Term Exposure (STEL):
15 ppm, 101,2 mg/m³
Indicative

TRGS 900, AGW:
10 ppm, 67 mg/m³, (1.5)
If the AGW and BGW values are complied with, there should be no risk of reproductive damage (see number 2.7)

| |
|--|
| Component: C9-C15 Aliphatic |
| Other occupational exposure limit values |

TRGS 900, AGW
600 mg/m³, (1.5)
Hydrocarbon mixtures, application as solvent (hydrocarbon solvent), additive-free

8.2 Exposure controls



Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8

Personal protective equipment

Respiratory protection

Advice: Required, if exposure limit is exceeded (e.g. OEL). Required if vapors or aerosol are released. In case of intensive or longer exposure use self-contained breathing apparatus. In case of brief exposure or low pollution use breathing filter apparatus.

Hand Protection

Advice: Protective gloves should be replaced at first signs of wear. As the product is a mixture of several substances, the durability of the glove materials cannot be calculated in advance and has to be tested before use. 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. To achieve a sufficient splashguard (min. break through time 10 min – 60 min) the following combination of gloves is recommended: Combination of HPPE laminated film (glove thickness: 0.062 mm) and a two-layer glove consisting of nitrile rubber as coating material (glove thickness: 0.4mm) and nylon as support Material.

Eye protection

Advice: Tightly fitting safety goggles

Skin and body protection

Advice: Impervious clothing

Environmental exposure controls

General advice: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Avoid subsoil penetration. If material reaches soil inform authorities responsible for such cases.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form: Liquid

Color: Colorless



Odor: Characteristics

Odor threshold: no data available

pH: no data available

Freezing point: no data available

Boiling point/
boiling range: 180-235°C

Flash point: 62°C

Evaporation rate: no data available

Flammability
(solid, gas): no data available

Upper explosion
limit: 7% (V)

Lower explosion
limit: 0.5% (V)

Vapor
Pressure: no data available

Relative vapor
density: no data available

Density: 0.796 g/cm³ (20°C)

Water
solubility: not responsible poorly mixable

Partition
coefficient
n-octanol/water: no data available

Auto-ignition
Temperature: no data available

Thermal
Decomposition: no data available



Viscosity,
Dynamic: no data available

Explosively: Formation of explosive air/vapor mixture is possible.

Oxidizing
Properties: no data available

9.2 Other information

No further information available.

10 Stability and reactivity

10.1 Reactivity

Advice: No decomposition if stored and applied as directed.

10.2 Chemical stability

Advice: Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

Hazardous reactions: Formation of explosive air/vapor mixtures is possible

10.4 Condition to avoid

Conditions to avoid: Heat, flames, sparks. Keep away from direct sunlight.

10.5 Incompatible materials

Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products

Hazardous decomposition

Products: Fire may cause evolution of: Carbon oxides, under certain fire conditions, traces of other toxic products cannot be excluded.

11 Toxicological information

11.1 Information on toxicological effects

| |
|---|
| Acute Toxicity |
| Oral |
| For this mixture there is no data available. Please find this information in the listing of the component/ components below the MSDS. |
| Inhalation |
| For this mixture there is no data available. Please find this information in the listing of the components/components bellows the MSDS. |
| Dermal |



| |
|---|
| For this mixture there is no data available. Please find this information in the listing of the component/component below the MSDA |
| Irritation |
| Skin |
| Results: Repeated exposure may cause skin dryness or cracking |
| Eyes |
| Results: Based on available data, the classification criteria are not met |
| Sensitization |
| Results: Based on available data, the classification criteria are not met |
| CMR-effects |
| CMR-Properties |
| Carcinogenicity: For this product currently there is no data available. Based on available data, the classification criteria are not met. |
| Mutagenicity: For this product currently there is no data available. Based on available data, the classification criteria are not met. |
| Reproductive toxicity: For this product currently there is no data available. |
| Specific Target Organ Toxicity |
| Single exposure |
| Remark: The substance or mixture is not classified as specific target organ toxicant, single exposure. |
| Repeated exposure |
| Remark: The substance of mixture is not classified as specific target organ toxicant, repeated exposure. |
| Other toxic properties |
| Repeated dose toxicity |
| No data available. |
| Aspiration hazard |
| May be fatal if swallowed and entered into airways |
| Component: Hydrocarbons, C10-C13, n-alkanes, isoalkane, cyclics, <2% aromatics |
| Acute toxicity |
| Oral |
| LD50: >5000mg/kg (rat) Data based on test results from data of a comparable product |
| Inhalation |
| LC50: >4,951 mg/kg (rat, vapor) Data based on test results from data of a comparable product |
| Dermal |
| LD50: >5000mg/kg (rabbit)(OECD Test guidelines 402) Data based on test results from data of a comparable product |
| Component: Hydrocarbons, C10-C13, isoalkanes, cyclics, >2% aromatics |
| Acute toxicity |
| Oral |
| LD50: >5000mg/kg (rat, male and female)(OECD-Test Guideline 401) Aspiration may cause pulmonary edema and pneumonitis. |
| Inhalation |



| | |
|--|-------------------------|
| LC50: > 4mg/l (rat, male and female)(OECD- Test Guideline 403) Inhalation may cause central nervous system effects. | |
| Dermal | |
| LD50:> 5000mg/kg (rabbit) (OECD- Test Guideline 402) | |
| Component: 2-(2-butoxyethoxy) ethanol | CAS-No. 112-34-5 |
| Acute toxicity | |
| Oral | |
| LD50: 3384 mg/kg (rat) | |
| Inhalation | |
| No data available | |
| Dermal | |
| LD50: 2700 mg/kg (rabbit) | |

12 Ecological information

12.1 Toxicity

| | |
|--|------------------------|
| Component: Hydrocarbons, C10-C13, n-alkanes, isoalkane, cyclics, <2% aromatics | |
| Fish | |
| LL0: 1000mg/l (Oncorhynchus mykiss (rainbow trout); 96h) (toxicity to fish) | |
| Toxicity to daphnia and other aquatic invertebrates | |
| EL0: 1000mg/l (Daphnia magna (Water flea); 48h) (Toxicity to daphnia) | |
| Algae | |
| EL0: 1000mg/l (Pseudokirchneriella subcapitata (green algae); 72h) (Toxicity to algae) | |
| Component: Hydrocarbons, C10-C13, isoalkane, cyclics, <2% aromatics | |
| Acute toxicity | |
| Fish | |
| LL50: >1000mg/l (Freshwater fish; 96h) (Toxicity to fish; OECD-Test Guideline 203) | |
| Toxicity to daphnia and other aquatic invertebrates | |
| EL50: >1000mg/l (Daphnia magna; 48h) (Toxicity to daphnia; OECD – Test Guideline 202) | |
| Algae | |
| EL50: >1000mg/l (Pseudokirchneriella subcapitata (green algae); 72h) (Toxicity to algae; OECD- Test guideline 201) | |
| Component: 2-(2-butoxyethoxy) ethanol | CAS-No.112-34-5 |
| Acute Toxicity | |
| Fish | |
| LC50: 1300mg/l (Lepomis Macrochirus; 96h) | |
| Toxicity to daphnia and other aquatic invertebrates | |
| EC50: 2850 mg/l (Daphnia;24h) (DIN 38412) | |
| Algae | |
| NOEC: > 100 mg/l (Desmodesmus subspicatus (green algae; 96h) (OECD-Test Guideline 201) | |
| Bacteria | |
| EC10: 1700 mg/l (Pseudomonas putida; 16h) | |



12.2 Persistence and degradability

| |
|---|
| Persistence and degradability |
| Persistence |
| Results: This product is insoluble and floats on water. The product evaporates easily from water surface. |
| Biodegradability |
| Results: Readily Biodegradable |
| Component: Hydrocarbons, C10-C13, n-alkanes, cyclics, <2% aromatics |
| Persistence and degradability |
| Persistence |
| Results: Transformation due to photolysis not expected to be significant. Transformation due to hydrolysis not expected to be significant. |
| Biodegradability |
| Results: 80% (Exposure Time: 28 d) Readily biodegradable |
| Component: Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics |
| Persistence and degradability |
| Persistence |
| Results: no data available |
| Biodegradability |
| Results: Readily biodegradable |
| Component: 2-(2-butoxyethoxy) ethanol |
| Persistence and degradability |
| Persistence |
| Results: no data available |
| Biodegradability |
| Results: 76% (exposure time: 28d) (OECD 301D) Readily biodegradable |
| Results: 90-100% (exposure time: 14d) (OECD 302B) Readily biodegradable |
| Results: 90-100% (exposure time: 14d) (OECD 301 E) Readily biodegradable |

12.3 Bio-accumulative potential

| |
|---|
| Component: Hydrocarbons, C10-C13, n-alkanes, isokanes, cyclics, <2% aromatics |
| Bioaccumulation |
| Results: Not determined |
| Component: Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics |
| Bioaccumulation |
| Results: No data available |



| |
|--|
| Component: 2-(2-butoxyethoxy)ethanol CAS-No. 112-34-5 |
| Bioaccumulation |
| Results: log Kow 0.56 Does not bio accumulate |

12.4 Mobility in soil

| |
|--|
| Component: Hydrocarbons, C10-C13, n-alkanes, isokanes, cyclics, <2% aromatics |
| Mobility |
| High volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids. |
| Component: Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics |
| Mobility |
| No data available |
| Component: Hydrocarbons, C10-C13, isoalkanes, cyclics, <2% aromatics |
| No data available |
| Component: 2-(2-butoxyethoxy)ethanol CAS-No. 112-34-5 |
| Mobility |
| No data available |

12.5 Results of PBT and vPvB assessments

| |
|--|
| Component: Hydrocarbons, C10-C13, n-alkanes, isokanes, cyclics, <2% aromatics |
| Results of PBT vPvB assessment |
| Results: This substance is not considered to be persistent, bio accumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bio accumulating. (vPvB) |
| Component: 2-(2-butoxyethoxy)ethanol CAS-No. 112-34-5 |
| Results of PBT vPvB assessment |
| Results: No data available |

12.6 Other adverse effects

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|--|
| Additional ecological information |
| Results: Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water systems. |

13 Disposal considerations

13.1 Waste treatment methods

Product: Disposal together with normal waste is not allowed. Do not let product enter drains. Can be incinerated, when in compliance with local regulations.

Contaminated



Packaging: Empty remaining contents. Do not burn, or use a cutting torch on the empty drum. Risk of explosion. Empty containers should be delivered to local recyclers for disposal of to the provider for their reutilization in case of being subject to return and deposit system.

European Waste
Catalogue

No: No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

14 Transport information

Nor dangerous goods for ADR, RID, and IMDG

14.1 Un-number

Not applicable.

14.2 Un proper shipping name

Not applicable.

14.3 Transport hazard class(es)

Not applicable.

14.4 Packaging group

Not applicable.

14.5 Environment hazards

Not applicable.

14.6 Special precautions for users

Not applicable.

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

IMDG: Not applicable

15 Regulatory information

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

WGK (DE): WGK:1; slightly water endangering; WGK (DE); Self-classification according VwVwS of May 199, Annex 4

Major Accident
Hazard

Legislation: Falls under the German StorgallV. 13

Other



Regulations: Occupational restrictions: take note of Dir 92/85/EEC on the safety and health of pregnant workers at work and of Dir 94/33/EC on the protection of young people at work.

2-(2-butoxyethoxy)

Ethanol: EU. Reach, Annex XVII, Marketing and Use Restrictions
(Regulation 1907/2006/EC)
Listed Point Nos.: 55

EU. Reach XVII Marketing and Use Restrictions
(Regulation 1907/2006/EC)
EC Number: 203-961-6

15.2 Chemical Safety Assessment

No data available.

16 Other information

Full text of R-phrases referred to under sections 2 and 3

R36: Irritating to eyes
R65: Harmful may cause lung damage if swallow
R66: Repeated exposure may cause skin dryness or cracking

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

H304: May be fatal if swallowed and enter airways
H319: Causes serious eye irritation
H412: Harmful to aquatic life with long lasting effects.

Further information:

Key literature

References: Supplier information and data from the "Database of registered substances" of the European Chemical Agency (ECHA) were used to create this data sheet.

Other

Information: The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision (24.06.2014) The information given on describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in a process unless specified in the text.