SAFETY DATA SHEET

Product Name: Butoxyl ®

Manufacturer or supplier's details:
Celanese Sales Germany GmbH
Am Unisys-Park 1
65843 Sulzbach (Taunus)
Germany

Celanese Pte Ltd
60 Anson Road
Maple Tree Anson #13-02
Singapore 079914

Product Information:
HazCom@celanese.com

Emergency telephone number:
+(65) 62656917 (Operations Room direct dial)
or fax request to +(65) 62664696 (Facsimile to Operations Room)
or email to posh.er@paccoffshore.com.sg

In China Emergency Number: 86-532-83889090 (NRCC)

Identified uses:
Solvent

2. Hazards identification

GHS Classification:

<table>
<thead>
<tr>
<th>Hazards</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute oral toxicity</td>
<td>Category 5</td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Labeling:

Signal Word: Warning

Hazard Statements:
H303 - May be harmful if swallowed
H401 - Toxic to aquatic life

Precautionary Statements:
P273 - Avoid release to the environment
P312 - Call a POISON PHYSICIAN/doctor/physician if you feel unwell.

1 of 9
3. Composition/Information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No</th>
<th>Percent %</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Methoxybutyl acetate</td>
<td>4435-53-4</td>
<td>min. 99.5</td>
</tr>
</tbody>
</table>

Remarks: Product is stabilized with 10 ppm BHT (3,5-Di-tert-butyl-4-hydroxytoluene)

4. First aid measures

General Information
Remove contaminated, soaked clothing immediately and dispose of safely. Pay attention to own protection. In any case show the physician the Safety Data Sheet.

Skin
Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.

Inhalation
Keep at rest. Move to fresh air. Call a physician immediately.

Ingestion
Rinse with plenty of water. If conscious, drink plenty of water. If swallowed, do not induce vomiting - seek medical advice.

5. Fire-fighting measures

NFPA: Health: 1  Flammability: 2  Instability: 1

Suitable extinguishing media
Foam, Dry chemical, Carbon dioxide (CO2)

Extinguishing media which must not be used for safety reasons
Do not use a solid water stream as it may scatter and spread fire.

Special exposure hazards arising from the substance or preparation itself, its combustion products, or released gases
Under conditions giving incomplete combustion, hazardous gases produced may consist of
Carbon monoxide
Carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons

Special protective equipment for fire-fighters
self-contained breathing apparatus (EN 133).

Environmental precautions
Water used to fight fire runoff can cause environmental damage. Dike and collect water used to fight fire.
6. Accidental release measures

Personal precautions
Avoid contact with the skin and the eyes. Keep away from heat and sources of ignition. Provide adequate ventilation.

Environmental precautions
Prevent further leakage or spillage. Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Dispose of in accordance with local regulations.

7. Handling and storage

Advice on safe handling
Provide sufficient air exchange and/or exhaust in work rooms.

Incompatible products
None known

Protection - fire and explosion:
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge. Ground and bond containers when transferring material. In case of fire, emergency cooling with water spray should be available.

Material storage
Keep in a dry, cool and well-ventilated place.

Incompatible products
None known

Technical measures/Storage conditions
Keep tightly closed in a dry, cool and well-ventilated place. Handle an open container with care.

8. Exposure controls / personal protection

ACGIH Exposure Limits
No exposure limits established.

OSHA Exposure Limits
No exposure limits established.

Exposure controls
Engineering measures

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General advice

Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Use only in an area equipped with a safety shower. Hold eye wash fountain available.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Respiratory protection

If aerosols or vapors are present, respiratory protection is required (gas filter A).

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face. Equipment should conform to EN 166.

Skin protection

Impervious clothing

Hand protection

Chemicals resistant gloves

Suitable material

Butyl-rubber

Reference substance

Butyl glycollate

Type

Butoject (Company KCL) or comparable article; or refer to glove manufacturer's recommendation

Evaluation according to EN 374: level 6

Material thickness

Approx. 0.3 mm

Break through time

480 min

9. Physical and chemical properties

Appearance

Form

Liquid

Color

Colourless

Odor

Weakly

Odor Threshold

Not determined

Molecular Weight

146.19 g/mol

Flash point

68.0°C

Method

DIN EN ISO 2719

Ignition temperature

410°C

Method

DIN 51794

Decomposition

Not determined

Temperature

Lower explosion limit

~ 1.2 Vol. %

Upper explosion limit

~ 7.7 Vol. %

Flammability (solids)

Not applicable

Melting point/range

< -20°C

Boiling point/range

170°C @ 1013 hPa

Density

0.95 g/ml @ 20°C

pH

Neutral
9. Physical and chemical properties

- Viscosity: 0.71 mPa*s @ 20°C
- Method: calculated
- Vapor pressure:
  - 0.34 hPa @ 20°C
  - 5.0 hPa @ 50°C
- Vapor density: 5.05 (Air=1)
- Evaporation Rate: Not determined
- Water solubility: 60.68 g/l @ 25°C
- Partition coefficient (n-octanol/water): 1.01 (calculated)
- Explosive Properties: not applicable based on consideration of the structure
- Oxidizing Properties: not applicable based on consideration of the structure
- Surface Tension: not determined
- Dissociation constant: not applicable based on consideration of the structure

10. Stability and reactivity

Reactivity
Stable under normal conditions of handling, use and transportation.

Conditions to avoid
Avoid any source of ignition. Avoid contact with heat, sparks, open flame, and static discharge.

Incompatible Materials
None known

Hazardous Combustion or Decomposition Products:
Thermal decomposition products may include oxides of carbon.
11. Toxicological information

Potential health effects

Routes of exposure
- Skin, Eyes

Immediate effects

Skin
No adverse health effects have been observed.

Eyes
No adverse health effects have been observed.

Inhalation
No adverse health effects have been observed.

Ingestion
Essentially non-toxic.

3-Methoxybutyl acetate

Acute oral toxicity
LD50: > 2000 mg/kg

Acute inhalation toxicity
LC50 (2h): >95000 mg/m³

Skin corrosion/irritation
Species: rabbit
Method: OECD 404

Species: mouse female
Method: MEST

Skin Sensitization
nonsensitizer
(Reference substance: n-Butyl acetate)

Species: rabbit eye
Method: OECD 405

Serious eye damage/eye irritation
Not irritating

Species: rat
Method: OECD 404

Carcinogenic effects
No evidence of carcinogenicity

in vitro Mutagenicity
Ames Test: negative - with and without metabolic activation - Method: OECD 471
Mouse lymphoma cell gene-mutation: negative - with and without metabolic activation - Method: OECD 476
(Reference substance: 3-Methoxybutanol)

In vitro Mammalian Chromosome aberrations in Chinese Hamster Cells: negative - with and without metabolic activation - Method: OECD 473
(Reference substance: 3-Methoxy-3-methylbutanol)

Reproductive toxicity
No toxicity to reproduction (Reference substance: 3-Methoxy-3-methyl-1-butanol)

Species: rat
NOEL: 1000 mg/kg bw/day

Developmental effects
No evidence of maternal or developmental toxicity

Species: rat
NOAEL: > 1000 mg/kg bw/day
12. Ecological Information

3-Methoxybutyl acetate

Acute fish toxicity
Species: Danio rerio (Zebra fish)
Method: OECD 203
LC50: 7.1 mg/l (96h)

Acute daphnia toxicity
Species: Daphnia magna
Method: DIN 38412, Part 11
EC50: 360 mg/l (24h)

Toxicity to aquatic plants
Species: Pseudokirchneriella subcapitata
Method: OECD 201
EC50: > 70 mg/l (72h)

Toxicity to bacteria
Species: Pseudomonas putida
Method: DIN 38412 T.8
EC50: > 1000 mg/l (16h)

Biodegradation
Method: OECD 301 E
> 70 % (10d)

Other potential hazards
The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII

13. Disposal considerations

Product information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse

14. Transport information

US Department of Transportation
UN/NA Number: NA 1993
Proper Shipping Name: Combustible liquid, n.o.s.
Hazard Inducer: (3-Methoxy-1-butylacetate)
Hazard class: 3
14. Transport information

Packing Group III
Emergency Resp. Guide 127

ADR/RID Not regulated

ADN ADN: Container
Not regulated

ADN Tanker
UN/ID No. ID 9003
Proper Shipping Name Substances with a flashpoint above 60°C and not more than 100°C, n.o.s.
Hazard Inducer (3-Methoxy-1-butylacetate)
Hazard Class 9
Environmentally hazardous no

ICAO/IATA Not restricted

IMDG Not regulated

15. Regulatory information

International Inventories
Australia (AICS)
Canada (DSL)
China (IECSC)
Europe (EINECS)
Japan (ENCS)
Japan (ISHL)
Korea (KECI)
New Zealand (NZIoC)
Philippines (PICCS)
United States (TSCA)

16. Other information

HMIS: Health: 0 Flammability: 2 Physical Hazard: 0

Prepared By
Product Stewardship Department
Celanese

Other Information:
Observe national and local legal requirements.

Changes against the previous version are marked by ***
Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on Celanese owned data and public sources deemed valid or acceptable. The absence of data elements required by ANSI or 1907/2006/EC indicates that no data meeting these requirements is available.

Further information
This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality. For more information, other material safety data sheets or technical data sheets please consult the Celanese homepage (www.celanese.com)