1. Product and company identification

Trade Name

Butoxyl ®

Celanese Sales Germany GmbH & Co. KG
Am Unisys-Park 1
65843 Sulzbach (Taunus)
Germany

Transportation emergency phone numbers:
In USA, call  800 424 9300
Outside USA, call  703 527 3887, collect calls accepted.

Identified uses
Solvent

2. Hazard Identification

GHS Classification

Hazards
Flammable liquid

Category
Category 4

Label elements
No Pictogram Required.

Signal Word
Warning

Hazard Statements
Combustible liquid

Precautionary statements
Keep away from open flames/hot surfaces. - No smoking
Wear protective gloves/ eye protection/ face protection.
In case of fire:
Use foam, dry chemical, carbon dioxide (CO2) to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/ container to an approved waste disposal plant.

3. Composition/information on ingredients
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>

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.

**Other Information**
Cool containers / tanks with water spray.
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.

Isolation
Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck in involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.

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.

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.

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

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

Incompatible products
None known

8. Exposure controls / personal protection

OSHA Exposure Limits
No exposure limits established.

ACGIH Exposure Limits
No exposure limits established.

Mexico National 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.

Protective equipment
A safety shower and eyewash should be readily available.

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.

Respiratory protection
Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must have an end of service life indicator, or a documented change out schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

Eye/face protection:
Wear chemical goggles when there is a reasonable chance of eye contact.

9. Physical and chemical properties

Appearance
<table>
<thead>
<tr>
<th>Form</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colourless</td>
</tr>
<tr>
<td>Odor</td>
<td>weakly</td>
</tr>
</tbody>
</table>

Molecular Weight 146.19

Flash point 68.0°C (154.4°F)
Method DIN EN ISO 2719

Ignition temperature 410°C (770°F)
Method DIN 51794
9. Physical and chemical properties

Decomposition Temperature: not determined
Lower explosion limit: ~ 1.2 Vol. %
Upper explosion limit: ~ 7.7 Vol. %
Melting point/range: < -20°C
Boiling point/range: 170°C (338°F) @ 1013 hPa
Density: 0.95 g/ml @ 20°C
pH: neutral
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: 1.01 (calculated)
(n-octanol/water)

10. Stability and reactivity

Chemical stability
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.

Possibility of hazardous reactions
No hazards to be especially mentioned.

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.
12. Ecological Information

3-Methoxybutyl acetate

<table>
<thead>
<tr>
<th>Acute oral toxicity</th>
<th>LD50: &gt; 2000 mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute inhalation toxicity</td>
<td>LC50 (2h): &gt;95000 mg/m³</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not irritating</td>
</tr>
<tr>
<td>Species</td>
<td>rabbit</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 404</td>
</tr>
</tbody>
</table>

Skin Sensitization

| Serious eye damage/eye irritation | Not irritating |
| Species | rabbit eye |
| Method | OECD 405 |

Carcinogenic effects

No evidence of carcinogenicity

in vitro Mutagenicity


Reproductive toxicity

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

Routes of exposure oral gavage
| Species | rat |
| NOEL: 1000 mg/kg bw/day |

Developmental effects

No evidence of maternal or developmental toxicity

Routes of exposure oral gavage
| Species | rat |
| NOAEL: > 1000 mg/kg bw/day |

Repeated exposure

Liver and kidney weights increases in the absence of histopathological change (Reference substance: 3-Methoxy-3-methyl-1-butanol)

Routes of exposure oral gavage
| Species | rats |
| Guideline for the 28-day repeated dose toxicity test in mammalian species |
| NOEL: 60 mg/kg bw/day |

3-Methoxybutyl acetate

Acute fish toxicity

LC50: 7.1 mg/l (96h)
12. Ecological Information

<table>
<thead>
<tr>
<th>Species</th>
<th>Danio rerio (Zebra fish)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD 203</td>
</tr>
<tr>
<td>Acute daphnia toxicity</td>
<td>EC50: 360 mg/l (24h)</td>
</tr>
<tr>
<td>Species</td>
<td>Daphnia magna</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 38412, Part 11</td>
</tr>
<tr>
<td>Toxicty to aquatic plants</td>
<td>EC50: &gt; 70 mg/l (72h)</td>
</tr>
<tr>
<td>Species</td>
<td>Pseudokirchneriella subcapitata</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 201</td>
</tr>
<tr>
<td>Toxicty to bacteria</td>
<td>EC50: &gt; 1000 mg/l (16h)</td>
</tr>
<tr>
<td>Species</td>
<td>Pseudomonas putida</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 38412 T.8</td>
</tr>
<tr>
<td>Biodegradation</td>
<td>Readily biodegradable</td>
</tr>
<tr>
<td></td>
<td>&gt; 70 % (10d)</td>
</tr>
<tr>
<td>Method</td>
<td>OECD 301 E</td>
</tr>
<tr>
<td>Other potential hazards</td>
<td>The substance does not meet the criteria for PBT / vPvB according to REACH, Annex XIII</td>
</tr>
</tbody>
</table>

13. Disposal considerations

Disposal considerations
Dispose of spilled material in accordance with state and local regulations for waste that is non-hazardous by Federal definition. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste.

14. Transport information

US Department of Transportation

<table>
<thead>
<tr>
<th>UN/NA Number:</th>
<th>NA 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>Combustible liquid, n.o.s.</td>
</tr>
<tr>
<td>Hazard Inducer</td>
<td>(3-Methoxy-1-butylacetate)</td>
</tr>
<tr>
<td>Hazard class</td>
<td>3</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
</tr>
<tr>
<td>Emergency Resp. Guide</td>
<td>127</td>
</tr>
</tbody>
</table>

TDG                    | Not regulated |
Mexico Transport Information | Not regulated |
ICAO/IATA               | Not restricted |
14. Transport information

IMDG
Not regulated

15. Regulatory Information

US State Regulations
Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

3-Methoxybutyl acetate 4435-53-4
New Jersey Listed

U.S. FEDERAL REGULATIONS

Environmental Regulations:

SARA 311:
Acute health: No
Chronic health: No
Fire: Yes
Sudden release of pressure: No
Reactive: No

INTERNATIONAL REGULATIONS

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

NFPA: Health: 1 Flammability: 2 Instability: 1
HMIS: Health: 0 Flammability: 2 Physical Hazard: 0
16. Other information

Prepared By
Product Stewardship Department
Celanese

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.

Other Information:
Observe national and local legal requirements
Changes against the previous version are marked by ***

Abbreviation and Acronym:
ADR = Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
CAS = Chemical Abstracts Service (division of the American Chemical Society)
CLP = Classification, Labelling and Packaging
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial Chemical Substances
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC Code = International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IMO)
ICAO = International Civil Aviation Organization
IMDG = International Maritime Code for Dangerous Goods
LC50 = Lethal Concentration
LD50 = Lethal Dose
LOAEC = Low Observed Adverse Effect Concentration
LOAEL = Low Observed Adverse Effect Level
LOEL = Low Observed Effect Level
MEST = Mouse Ear Swelling Test
NOAEC = No Observed Adverse Effect Concentration
NOAEL = No Observed Adverse Effect Level
NOEC = No Observed Effect Concentration
NOEL = No Observed Effect Level
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RCR = Risk Characterization Ratio
RID = Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
R-Phrases = Risk Phrases
S-Phrases = Safety Phrases
STOT RE = Specific Target Organ Toxicity Repeated Exposure
STOT SE = Specific Target Organ Toxicity Single Exposure
STP = Sewage Treatment Plant
vPvB = very Persistent and very Bioaccumulative