



Safety Data Sheet

The Dow Chemical Company

Product Name: BUTYL CELLOSOLVE(TM) ACETATE

Revision Date: 2011/03/29

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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

Section 1. Identification of the substance/preparation and of the company/undertaking

1.1 Product identifiers

Product Name

BUTYL CELLOSOLVE(TM) ACETATE

Chemical Name: 2-Butoxyethyl acetate; butylglycol acetate

CAS-No. 112-07-2

EC-No. 203-933-3

REACH Registration Number

01-2119475112-47-0001

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

Identified uses

Manufacture of substance, industrial. Formulation and (re)packing of substances and mixtures.
Distribution of substance, industrial. Uses in Coatings, industrial. Uses in Coatings, professional.
Uses in Coatings, consumer.

1.3 Details of the supplier of the safety data sheet

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
48674 Midland, MI
USA

Customer Information Number:

800-258-2436

SDSQuestion@dow.com

1.4 EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

00 31 115 69 4982

®(TM)*Trademark

Section 2. Hazards Identification

2.1 Classification of the substance or mixture

Classification - REGULATION (EC) No 1272/2008

Acute toxicity (Oral)	Category 4	H302	Harmful if swallowed.
Acute toxicity (Dermal)	Category 4	H312	Harmful in contact with skin.

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

Xn	R20/21	Harmful by inhalation and in contact with skin.
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2.2 Label elements

Labelling - REGULATION (EC) No 1272/2008

Hazard pictograms



Signal Word: Warning

Hazard statements:

H302 + H312 Harmful if swallowed or in contact with skin.

Precautionary Statements:

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P330 Rinse mouth.

P312 Call a POISON CENTER or doctor/ physician if you feel unwell.

P322 Specific measures (see supplemental first aid instructions on this label).

P363 Wash contaminated clothing before reuse.

P501 Dispose of contents and container to licensed, permitted incinerator, or other thermal destruction device.

2.3 Other Hazards

No information available.

Section 3. Composition/information on ingredients

3.1 Substance

This product is a substance.

CAS-No. / EC-No. / Index	REACH No.	Amount	Component	Classification: REGULATION (EC) No 1272/2008
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CAS-No. 112-07-2	01- 2119475112-	>= 99.0 %	2-Butoxyethyl acetate;	Acute Tox., 4, H302
EC-No. 203-933-3	47		butylglycol acetate	Acute Tox., 4, H312
Index				

|| 607-038-00-2

CAS-No. / EC-No. / Index	Amount	Component	Classification: 67/548/EEC
CAS-No. 112-07-2 EC-No. 203-933-3 Index 607-038-00-2	>= 99.0 %	2-Butoxyethyl acetate; butylglycol acetate	Xn: R20/21

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

Section 4. First-aid measures

4.1 Description of first aid measures

General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin Contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Contaminated leather items such as shoes should be disposed of properly. Safety shower should be located in immediate work area.

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

4.2 Most important symptoms and effects, both acute and delayed

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), no additional symptoms and effects are anticipated.

4.3 Indication of immediate medical attention and special treatment needed

Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Section 5. Fire Fighting Measures

5.1 Extinguishing Media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

5.2 Special hazards arising from the substance or mixture

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.3 Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. No smoking in area. Ventilate area of leak or spill. Keep upwind of spill. Refer to Section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

6.2 Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

6.3 Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Absorb with materials such as: Non-combustible material. Clay. Zorb-all®. Large spills: Dike area to contain spill. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Section 7. Handling and Storage

7.1 Precautions for safe handling

Handling

General Handling: Keep away from heat, sparks and flame. Avoid prolonged contact with eyes, skin and clothing. Do not swallow. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Other Precautions: Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2 Conditions for safe storage, including any incompatibilities

Storage

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more specific information.

7.3 Specific end uses

See the technical data sheet on this product for further information.

Section 8. Exposure Controls / Personal Protection

8.1 Control parameters

Exposure Limits

Component	List	Type	Value
2-Butoxyethyl acetate; butylglycol acetate	ACGIH	TWA	20 ppm
	EU IOELV	TWA	133 mg/m ³ 20 ppm SKIN
	EU IOELV	STEL	333 mg/m ³ 50 ppm SKIN
	UK WEL	TWA	20 ppm SKIN
	UK WEL	STEL	50 ppm SKIN

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Derived No Effect Level (DNEL)

Workers

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin Contact	102 mg/kg bw/day
Acute - systemic effects	Inhalation	775 mg/m ³
Acute - local effects	Skin Contact	Not available
Acute - local effects	Inhalation	333 mg/m ³
Long-term - systemic effects	Skin Contact	102 mg/kg bw/day
Long-term - systemic effects	Inhalation	133 mg/m ³
Long-term - local effects	Skin Contact	Not available
Long-term - local effects	Inhalation	Not available

Consumers

Potential Health Effects	Possible route(s) of exposure:	Value
Acute - systemic effects	Skin contact	27 mg/kg bw/day
Acute - systemic effects	Inhalation	499 mg/m ³
Acute - systemic effects	Ingestion	18 mg/kg bw/day
Acute - local effects	Skin contact	Not available
Acute - local effects	Inhalation	166 mg/m ³
Long-term - systemic effects	Skin contact	36 mg/kg bw/day
Long-term - systemic effects	Inhalation	67 mg/m ³
Long-term - systemic effects	Ingestion	4.3 mg/kg bw/day
Long-term - local effects	Skin contact	Not available
Long-term - local effects	Inhalation	Not available

Predicted No Effect Concentration (PNEC)

Compartment	Value	Remarks
Fresh water	0.304 mg/l	
Marine water	0.0304 mg/l	
Intermittent releases	0.56 mg/l	
STP	90 mg/l	
Fresh water sediment	2.03 mg/kg d.w.	
Marine sediment	0.203 mg/kg d.w.	
Soil	0.68 mg/kg d.w.	

8.2 Exposure controls**Personal Protection**

Eye/Face Protection: Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent. If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles. Chemical goggles should be consistent with EN 166 or equivalent. If exposure causes eye discomfort, use a full-face respirator.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Hand protection: Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Avoid gloves made of: Viton. When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus. In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure air line with auxiliary self-contained air supply. Use the following CE approved air-purifying respirator: Organic vapor cartridge with a particulate pre-filter, type AP2.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Section 9. Physical and Chemical Properties
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9.1 Information on basic physical and chemical properties**Appearance****Physical State**

Liquid.

Color

Colorless

Odor

Fruity

Odor Threshold	No test data available
pH	No test data available
Melting Point	Not applicable to liquids
Freezing Point	-64 °C <i>Literature</i>
Boiling Point (760 mmHg)	192 °C <i>Literature</i> .
Flash Point - Closed Cup	78 °C <i>Literature</i>
Flash Point - Open Cup	88 °C <i>Cleveland Open Cup ASTM D92</i>
Evaporation Rate (Butyl Acetate = 1)	0.04 <i>Literature</i>
Flammability (solid, gas)	Not applicable to liquids
Flammable Limits In Air	Lower: 0.5 %(V) <i>Literature</i> Upper: 8.54 %(V) <i>Literature</i>
Vapor Pressure	50 Pa @ 20 °C <i>Literature</i>
Vapor Density (air = 1)	6 <i>Literature</i>
Specific Gravity (H2O = 1)	0.972 <i>Literature</i>
Solubility in water (by weight)	15,000 mg/l @ 20 °C <i>Literature</i>
Partition coefficient, n-octanol/water (log Pow)	1.51 <i>Measured</i>
Autoignition Temperature	280 °C <i>Literature</i>
Decomposition Temperature	No test data available
Dynamic Viscosity	1.81 mPa.s @ 20 °C <i>Literature</i>
Kinematic Viscosity	1.91 mm ² /s @ 20 °C <i>Literature</i>
Explosive properties	No
Oxidizing properties	No

9.2 Other information

Liquid Density	0.939 g/m ³ @ 20 °C <i>Literature</i>
Molecular Weight	160 g/mol <i>Literature</i>
Henry's Law Constant (H)	5.27E-06 atm*m ³ /mole; 25 °C <i>Measured</i>

Section 10. Stability and Reactivity

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Thermally stable at typical use temperatures.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

10.5 Incompatible Materials: Avoid contact with: Strong acids. Strong oxidizers.

10.6 Hazardous decomposition products

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Acute Toxicity**Ingestion**

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

LD50, Rat 1,880 mg/kg

Aspiration hazard

Based on physical properties, not likely to be an aspiration hazard.

Dermal

Prolonged or widespread skin contact may result in absorption of potentially harmful amounts.

LD50, Rabbit 1,500 mg/kg

Inhalation

Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Prolonged excessive exposure to mist may cause serious adverse effects, even death.

No deaths occurred following exposure to a saturated atmosphere. LC0, 4 h, Vapor, Rat 400 ppm

Eye damage/eye irritation

May cause slight eye irritation. Effects may include discomfort and redness. Vapor or mist may cause eye irritation.

Skin corrosion/irritation

Prolonged contact is essentially nonirritating to skin.

Sensitization**Skin**

Did not cause allergic skin reactions when tested in guinea pigs.

Respiratory

No relevant data found.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Kidney. Blood. Blood-forming organs (Bone marrow & Spleen).

Chronic Toxicity and Carcinogenicity

For similar material(s): In long-term animal studies with ethylene glycol butyl ether, small but statistically significant increases in tumors were observed in mice but not rats. The effects are not believed to be relevant to humans. If the material is handled in accordance with proper industrial handling procedures, exposures should not pose a carcinogenic risk to man.

Developmental Toxicity

For similar material(s): Has been toxic to the fetus in laboratory animals at doses toxic to the mother.

For similar material(s): Did not cause birth defects in laboratory animals.

Reproductive Toxicity

For similar material(s): In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

Genetic Toxicology

Based on information for a similar material: In vitro genetic toxicity studies were negative. Based on information for a similar material: Animal genetic toxicity studies were negative.

Section 12. Ecological Information**12.1 Toxicity**

Material is harmful to aquatic organisms (LC50/EC50/IC50 between 10 and 100 mg/L in the most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: > 20 - < 40 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea *Daphnia magna*, static, 48 h, immobilization: 37 mg/l

Aquatic Plant Toxicity

Ec50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), static, biomass growth inhibition, 72 h: 520 mg/l

ErC50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), static, Growth rate inhibition, 72 h: 1,570 mg/l

Toxicity to Micro-organisms

IC50; activated sludge, 30 min: 900 mg/l

Aquatic Invertebrates Chronic Toxicity Value

Ceriodaphnia Dubia (water flea), static renewal, 7 d, reproduction, NOEC: 30 mg/l

12.2 Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method	10 Day Window
88 %	28 d	OECD 301F Test	pass
77 - 90 %	28 d	OECD 302B Test	Not applicable

12.3 Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient, n-octanol/water (log Pow): 1.51 Measured

12.4 Mobility in soil

Mobility in soil: Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient, soil organic carbon/water (Koc): 26 - 224 Estimated.

Henry's Law Constant (H): 5.27E-06 atm*m3/mole; 25 °C Measured

12.5 Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

This substance is not in Annex I of Regulation (EC) 2037/2000 on substances that deplete the ozone layer.

Section 13. Disposal Considerations

13.1 Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

Section 14. Transport Information

ROAD & RAIL

NOT REGULATED

OCEAN

NOT REGULATED

AIR

NOT REGULATED

INLAND WATERWAYS**Proper Shipping Name:** SUBSTANCES WITH FP >61<=100 DEGR. C.**Technical Name:** ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE**Hazard Class:** 9 **ID Number:** ID9003**Section 15. Regulatory Information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****European Inventory of Existing Commercial Chemical Substances (EINECS)**

This product is on the EINECS inventory.

15.2 Chemical Safety Assessment

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

Section 16. Other Information**Hazard statement in the composition section**

H302	Harmful if swallowed.
H312	Harmful in contact with skin.

Risk-phrases in the Composition section

R20/21	Harmful by inhalation and in contact with skin.
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Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact.

Revision

Identification Number: 834 / 1001 / Issue Date 2011/03/29 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.