SECTION 1. Identification

Product identifier

- Product number: BX1735
- Product name: n-Butyl Acetate GR ACS
- CAS-No.: 123-86-4

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

- Identified uses: Reagent for analysis

Details of the supplier of the safety data sheet

- Company: EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
- MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.

Emergency telephone

- CHEMTREC (USA): 800-424-9300
- CHEMTREC (International): +1-703-527-3887
- 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

- Flammable liquid, Category 3, H226
- Specific target organ systemic toxicity - single exposure, Category 3, Central nervous system, H336

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

GHS-Labeling

Hazard pictograms

Signal Word

Warning

Hazard Statements

H226 Flammable liquid and vapor.
H336 May cause drowsiness or dizziness.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
SECTION 3. Composition/information on ingredients

Formula: \(CH_3COO(CH_2)_3CH_3\) \(C_8H_{12}O_2\) (Hill)
Molar mass: 116.16 g/mol

Hazardous ingredients

Chemical name (Concentration)
CAS-No.
\(n\)-Butylacetate (\(>= 90\% - <= 100\%\))
123-86-4
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact
After eye contact: rinse out with plenty of water.

Ingestion

Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed
Drowsiness, narcosis, somnolence
Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed
Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Activated charcoal

SECTION 5. Fire-fighting measures
Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters
Special protective equipment for fire-fighters
Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures
Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions
Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage
Precautions for safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.
Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities
Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at room temperature.

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-Butylacetate 123-86-4</td>
<td>NIOSH/Guide</td>
<td>Recommended exposure limit (REL):</td>
<td>150 ppm 710 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>200 ppm 950 mg/m³</td>
</tr>
<tr>
<td></td>
<td>OSHA_TRANS</td>
<td>PEL:</td>
<td>150 ppm 710 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Z1A</td>
<td>Time Weighted Average (TWA):</td>
<td>150 ppm 710 mg/m³</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>Time Weighted Average (TWA):</td>
<td>50 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>150 ppm</td>
</tr>
</tbody>
</table>

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

Eye/face protection
Safety glasses

Hand protection
splash contact:
Glove material: Nitrile rubber
Glove thickness: 0.40 mm
Break through time: > 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 730 Camatri®-Velours (splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:
Flame retardant antistatic protective clothing.

Respiratory protection required when vapors/aerosols are generated.
Recommended Filter type: Filter A (acc. to DIN 3181) for vapors of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

Physical state liquid
Color colorless
Odor fruity
Odor Threshold 7 - 20 ppm
pH 6.2 at 5.3 g/l

68 °F (20 °C)

(External MSDS)

pour point ca. -130 °F (-90 °C)

Method: ISO 3016

Boiling point/boiling range 259 °F (126 °C)
at 1,013 hPa

Method: OECD Test Guideline 103

Flash point 81 °F (27 °C)
at 1,013 hPa

Method: Tested according to Directive 92/69/EEC.

Evaporation rate No information available.
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product number</td>
<td>BX1735</td>
</tr>
<tr>
<td>Product name</td>
<td>n-Butyl Acetate GR ACS</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1.4 %(V)</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>7.5 %(V)</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>15 hPa at 68 °F (20 °C)</td>
</tr>
<tr>
<td></td>
<td>63 hPa at 122 °F (50 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>4.0</td>
</tr>
<tr>
<td>Density</td>
<td>0.88 g/cm³ at 68 °F (20 °C)</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>5.3 g/l at 68 °F (20 °C)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 105</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>log Pow: 2.3 (25 °C)</td>
</tr>
<tr>
<td></td>
<td>OECD Test Guideline 107</td>
</tr>
<tr>
<td></td>
<td>Bioaccumulation is not expected.</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>779 °F (415 °C) at 1,010 hPa</td>
</tr>
<tr>
<td></td>
<td>Method: DIN 51794</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>0.73 mPa.s at 68 °F (20 °C)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 114</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified as explosive.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>698 °F (370 °C)</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>0.83 mm²/s at 68 °F (20 °C)</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 114</td>
</tr>
<tr>
<td>Conductivity</td>
<td>&lt; 0.2 µS/cm</td>
</tr>
</tbody>
</table>
SECTION 10. Stability and reactivity

Reactivity
Vapor/air-mixtures are explosive at intense warming.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions
Risk of explosion with:
Alkali metals, alkali hydroxides, Strong oxidizing agents

Conditions to avoid
Heating.

Incompatible materials
rubber, various plastics

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Target Organs
Eyes
Skin
Respiratory system
Central nervous system

Acute oral toxicity
LD50 Rat: 10,760 mg/kg
OECD Test Guideline 423

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

Acute inhalation toxicity
LC50 Rat: > 21 mg/l; 4 h; vapor
OECD Test Guideline 403

Acute dermal toxicity
LD50 Rabbit: > 14,100 mg/kg
OECD Test Guideline 402

Skin irritation
Rabbit
Result: No skin irritation
OECD Test Guideline 404
Repeated exposure may cause skin dryness or cracking.

*Eye irritation*
Rabbit
Result: No eye irritation
OECD Test Guideline 405

*Sensitization*
In animal experiments:
Result: negative

(IUCLID)
Patch test:
Result: negative

(IUCLID)
*Genotoxicity in vitro*
Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
Method: OECD Test Guideline 473

*Specific target organ systemic toxicity - single exposure*
May cause drowsiness or dizziness.
Target Organs: Central nervous system

*Specific target organ systemic toxicity - repeated exposure*
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*
Regarding the available data the classification criteria are not fulfilled.

*Carcinogenicity*

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
Further information

After absorption of large quantities:
somnolence, Drowsiness, narcosis
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
flow-through test LC50 Pimephales promelas (fathead minnow): 18 mg/l; 96 h
Analytical monitoring: yes
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
static test EC50 Daphnia magna (Water flea): 44 mg/l; 48 h (ECHA)

Toxicity to algae
static test EC50 Desmodesmus subspicatus (green algae): 674.7 mg/l; 72 h (ECHA)
static test NOEC Desmodesmus subspicatus (green algae): 200 mg/l; 72 h (ECHA)

Toxicity to bacteria
EC50 Pseudomonas putida: 959 mg/l; 18 h (IUCLID)

Persistence and degradability

Biodegradability
98 %; 28 d; aerobic
OECD Test Guideline 301D
Readily biodegradable.

Theoretical oxygen demand (ThOD)
2,207 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 7 - 46 %
(Lit.)

Ratio COD/ThBOD
78 %
(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: 2.3 (25 °C)
OECD Test Guideline 107
Bioaccumulation is not expected.

Mobility in soil

No information available.

Additional ecological information

Discharge into the environment must be avoided.
SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)
UN number UN 1123
Proper shipping name BUTYL ACETATES
Class 3
Packing group III
Environmentally hazardous --

Air transport (IATA)
UN number UN 1123
Proper shipping name BUTYL ACETATES
Class 3
Packing group III
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)
UN number UN 1123
Proper shipping name BUTYL ACETATES
Class 3
Packing group III
Environmentally hazardous --
Special precautions for user yes
EmS F-E S-D

SECTION 15. Regulatory information

United States of America

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
Clean Water Act
The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients
n-Butylacetate

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients
n-Butylacetate

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know

Ingredients
n-Butylacetate

Pennsylvania Right To Know

Ingredients
n-Butylacetate

New Jersey Right To Know

Ingredients
n-Butylacetate

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.
Labeling

Hazard pictograms

Signal Word

Warning

Hazard Statements

H226 Flammable liquid and vapor.
H336 May cause drowsiness or dizziness.
EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary Statements

Prevention

P210 Keep away from heat.

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

H226 Flammable liquid and vapor.
H336 May cause drowsiness or dizziness.

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

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 06/20/2017

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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