



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY

**Product name:** Butyl Acetate, Urethane Grade

**Issue Date:** 04/10/2015

**Print Date:** 04/13/2015

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.

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## 1. IDENTIFICATION

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**Product name:** Butyl Acetate, Urethane Grade

**Recommended use of the chemical and restrictions on use**

**Identified uses:** We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**

THE DOW CHEMICAL COMPANY  
2030 WILLARD H DOW CENTER  
MIDLAND MI 48674-0000  
UNITED STATES

**Customer Information Number:**

800-258-2436

SDSQuestion@dow.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 800-424-9300

**Local Emergency Contact:** 989-636-4400

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## 2. HAZARDS IDENTIFICATION

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**Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Flammable liquids - Category 3

Specific target organ toxicity - single exposure - Category 3

**Label elements**

**Hazard pictograms**



Signal word: **WARNING!**

**Hazards**

Flammable liquid and vapour.  
May cause drowsiness or dizziness.

**Precautionary statements****Prevention**

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/ eye protection/ face protection.

**Response**

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.  
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage**

Store in a well-ventilated place. Keep container tightly closed.  
Store in a well-ventilated place. Keep cool.  
Store locked up.

**Disposal**

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

**Other hazards**

no data available

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Synonyms:** n-butyl acetate

This product is a substance.

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**Component****CASRN****Concentration**

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n-Butyl acetate

123-86-4

&gt; 99.5 %

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## 4. FIRST AID MEASURES

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### 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:** Wash off with plenty of water. Suitable emergency safety shower facility should be available in 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. Suitable emergency eye wash facility should be available in work area.

**Ingestion:** Do not induce vomiting. Call a physician and/or transport to emergency facility immediately.

**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), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** Maintain adequate ventilation and oxygenation of the patient. May cause asthma-like (reactive airways) symptoms. Bronchodilators, expectorants, antitussives and corticosteroids may be of help. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. The decision of whether to induce vomiting or not should be made by a physician. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. General purpose synthetic foams (including AFFF type) or protein foams are preferred if available. Alcohol resistant foams (ATC type) may function.

**Unsuitable extinguishing media:** Do not use direct water stream. Straight or direct water streams may not be effective to extinguish fire.

### 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:** Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Electrically ground and bond all equipment. Flammable mixtures of this product are readily ignited even by static discharge. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Flammable mixtures may exist within the vapor space of containers at room temperature. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9.

#### **Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Water may not be effective in extinguishing fire. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Do not use direct water stream. May spread fire. Eliminate ignition sources. 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. Avoid accumulation of water. Product may be carried across water surface spreading fire or contracting an ignition source.

**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.

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## **6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. No smoking in area. For large spills, warn public of downwind explosion hazard. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Vapor explosion hazard. Keep out of sewers. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment. If available, use foam to smother or suppress. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

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## **7. HANDLING AND STORAGE**

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**Precautions for safe handling:** Avoid contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly after handling. Avoid breathing vapor. Keep container closed. Use with adequate ventilation. No smoking, open flames or sources of ignition in handling and storage area. Electrically bond and ground all containers and equipment. 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. Never use air pressure for transferring product. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. This product is a poor conductor of electricity and can become electrostatically charged, even in bonded or grounded equipment. If sufficient charge is accumulated, ignition of flammable mixtures can occur. Handling operations that can promote accumulation of static charges include but are not limited to mixing, filtering, pumping at high flow rates, splash filling, creating mists or sprays, tank and container filling, tank cleaning, sampling, gauging, switch loading, vacuum truck operations.

**Conditions for safe storage:** Flammable mixtures may exist within the vapor space of containers at room temperature. Keep container closed. Minimize sources of ignition, such as static build-up, heat, spark or flame. Shelf life: Use within

#### Storage stability

##### Storage Period:

##### Steel drums.

24 Month

##### Bulk

12 Month

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
n-Butyl acetate	ACGIH	TWA	150 ppm
	ACGIH	STEL	200 ppm
	OSHA Z-1	TWA	710 mg/m <sup>3</sup> 150 ppm

#### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

#### Individual protection measures

**Eye/face protection:** Use chemical goggles. If exposure causes eye discomfort, use a full-face respirator.

##### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. 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"). Viton. 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.

**Other protection:** When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

**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, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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### Appearance

<b>Physical state</b>	Liquid.
<b>Color</b>	Colorless clear
<b>Odor</b>	Fruity
<b>Odor Threshold</b>	No test data available
<b>pH</b>	No test data available
<b>Melting point/range</b>	No test data available
<b>Freezing point</b>	-90 °C ( -130 °F) <i>Literature</i>
<b>Boiling point (760 mmHg)</b>	126 °C ( 259 °F) <i>Literature</i>
<b>Flash point</b>	<b>closed cup</b> 29 °C ( 84 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
<b>Evaporation Rate (Butyl Acetate = 1)</b>	1.0 <i>Measured</i>
<b>Flammability (solid, gas)</b>	Not applicable to liquids
<b>Lower explosion limit</b>	1.7 % vol <i>Literature</i>
<b>Upper explosion limit</b>	7.6 % vol <i>Literature</i>
<b>Vapor Pressure</b>	8 mmHg at 20 °C (68 °F) <i>Literature</i>
<b>Relative Vapor Density (air = 1)</b>	4 <i>Literature</i>
<b>Relative Density (water = 1)</b>	0.8826 at 20 °C (68 °F) / 20 °C <i>Literature</i>
<b>Water solubility</b>	5.3 g/L at 20 °C (68 °F) <i>Literature</i>
<b>Partition coefficient: n-octanol/water</b>	no data available
<b>Auto-ignition temperature</b>	415 °C (779 °F) <i>Literature</i>
<b>Decomposition temperature</b>	No test data available
<b>Dynamic Viscosity</b>	0.7 cP at 20 °C (68 °F) <i>Literature</i>
<b>Kinematic Viscosity</b>	0.83 mm <sup>2</sup> /s at 20 °C (68 °F)
<b>Explosive properties</b>	no data available
<b>Oxidizing properties</b>	no data available
<b>Molecular weight</b>	116.2 g/mol <i>Literature</i>

**Percent volatility** no data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

**Incompatible materials:** Avoid contact with: Strong acids. Strong bases. Strong oxidizers. Strong reducing agents.

**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: Carbon monoxide. Carbon dioxide.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat, male, 12,789 mg/kg

LD50 Oral, Rat, female, 10,760 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, male and female, > 14,112 mg/kg

#### Acute inhalation toxicity

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

### Skin corrosion/irritation

Brief contact is essentially nonirritating to skin.

Prolonged contact may cause severe skin irritation with local redness and discomfort.  
May cause drying and flaking of the skin.

**Serious eye damage/eye irritation**

May cause moderate eye irritation.

Corneal injury is unlikely.

Vapor may cause eye irritation experienced as mild discomfort and redness.

**Sensitization**

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

Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause drowsiness or dizziness.

Route of Exposure: Inhalation

Target Organs: Nervous system

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

In animals, effects have been reported on the following organs:

Nasal tissue.

**Carcinogenicity**

No relevant data found.

**Teratogenicity**

Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

In laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. In animal studies, did not interfere with fertility.

**Mutagenicity**

In vitro genetic toxicity studies were negative.

**Aspiration Hazard**

Product test data not available.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**n-Butyl acetate**

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.

As product: The LC50 has not been determined.

**Aspiration Hazard**



Aspiration into the lungs may occur during ingestion or vomiting, causing lung damage or even death due to chemical pneumonia.

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## 12. ECOLOGICAL INFORMATION

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*Ecotoxicological information on this product or its components appear in this section when such data is available.*

### Toxicity

#### Acute toxicity to fish

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 18 mg/l

#### Acute toxicity to aquatic invertebrates

LC50, Daphnia magna (Water flea), 48 Hour, 44 mg/l, Method Not Specified.

#### Acute toxicity to algae/aquatic plants

ErC50, Desmodesmus subspicatus (green algae), 72 Hour, Growth rate inhibition, 648 mg/l

#### Toxicity to bacteria

EC50, Bacteria, 16 Hour, > 1,000 mg/l

#### Chronic aquatic toxicity

#### Chronic toxicity to aquatic invertebrates

NOEC, Daphnia magna (Water flea), 21 d, 23 mg/l

### Persistence and degradability

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 83 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301D or Equivalent

**Theoretical Oxygen Demand:** 2.20 mg/mg

#### Photodegradation

**Sensitizer:** OH radicals

**Atmospheric half-life:** 2.32 d

**Method:** Estimated.

### Bioaccumulative potential

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

**Partition coefficient: n-octanol/water(log Pow):** Pow: 3.2 at 25 °C Measured

**Bioconcentration factor (BCF):** 15 Fish. Estimated.

### Mobility in soil

**Partition coefficient(Koc):** 19 - 70 Estimated.

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

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### 14. TRANSPORT INFORMATION

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**DOT**

<b>Proper shipping name</b>	Butyl acetates
<b>UN number</b>	UN 1123
<b>Class</b>	3
<b>Packing group</b>	III
<b>Reportable Quantity</b>	Butyl acetates

**Classification for SEA transport (IMO-IMDG):**

<b>Proper shipping name</b>	BUTYL ACETATES
<b>UN number</b>	UN 1123
<b>Class</b>	3
<b>Packing group</b>	III
<b>Marine pollutant</b>	No
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

<b>Proper shipping name</b>	Butyl acetates
<b>UN number</b>	UN 1123
<b>Class</b>	3
<b>Packing group</b>	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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**15. REGULATORY INFORMATION**

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**OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**

Fire Hazard  
Acute Health Hazard

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 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.

**Pennsylvania Worker and Community Right-To-Know Act:**

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

<b>Components</b>	<b>CASRN</b>
n-Butyl acetate	123-86-4

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

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**16. OTHER INFORMATION**

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**Revision**

Identification Number: 101196941 / A001 / Issue Date: 04/10/2015 / Version: 6.0

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

**Legend**

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

STEL	Short-term exposure limit
TWA	8-hour, time-weighted average

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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.