



HOW TO READ A SAFETY DATA SHEET (SDS)

Safety Data Sheets (SDS) are an essential requirement of the OSHA Hazard Communication Standard. SDS are documents that are used to inform students, employees, and the general public about how materials can be safely handled, used, and stored. Using clear and straightforward language, each SDS provides all the relevant safety and hazard information in a consistent, useful, and easy-to-read two-page format. This SDS follows the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The 15 sections are divided into four major areas, each designed to answer a specific question.

What is the material? What do I need to know immediately in an emergency? (Sections 1-3)





A It is important that the chemical name on the label match the name on the SDS. Many chemicals have similar names, but very different properties

D The section provides an overview of the physical and health hazard risks associated with using the material

E This section includes the formula, formula weight, concentration, and CAS#. The CAS# is the single identifying number of each specific substance. CAS# should match the CAS# on the bottle label

What should I do if a hazardous situation occurs? (Sections 4-6)

G This section is written for the firefighter. Flash point (the lowest temperature at which enough vapor is present to form an ignitable mixture with air); upper and lower flammable limits; and the auto ignition temperature (AIT) are common properties included in this section

Safety Data Sheet (SDS)					
Section 1- Chemical Product & Company Identification					
n-Butyl Alcohol A			B		
Flinn Scientific, Inc P.O. Box 219 Batavia, IL 60510 (800) 424-9300			Signal Word DANGER		
CHEMTREC Emergency Phone Number: (800) 424-9300					
Section 2- Hazards Identification C					
D		Pictograms			
Hazard class: Flammable liquids (category 3). flammable liquid and vapor (H226). Keep away from heat, sparks, open flames, and hot surfaces. No smoking (P210).					
Hazard class: Acute toxicity, oral (category 4). Harmful if swallowed (H 302). Do not eat, drink or smoke when using this product (P270)					
Hazard class: Skin corrosion or irritation (category 2). Causes skin irritation (H315)					
Hazard class: Serious eye damage/eye irritation (category 1). Causes serious eye damage (H318)					
Hazard class: Specific target organ toxicity, single exposure; respiratory tract irritation (category 3). May cause respiratory irritation (H335).					
Hazard class: Specific target organ toxicity, single exposure; Narcotic effects (category 3). May cause drowsiness or dizziness (H336). Avoid breathing mist, vapors or spray (P261).					
Section 3- Composition, Information on Ingredients					
E	Component Name	CAS Number	Formula	Formula weight	Concentration
	<i>n-Butyl alcohol</i>	71-36-3	CH ₃ (CH ₂) ₂ CH ₂ OH	74.12	
	Synonym: 1-Butanol; n-Butanol				
Section 4- First Aid Measures F					
Call a POISON CENTER or physician if you feel unwell (P312)					
If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing (P304+P340)					
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing (P305+P351+P338).					
If on skin (or hair): Immediately remove all contaminated clothing. Rinse skin with water (P303+P361+P353).					
If swallowed: Rinse mouth. Call a POISON CENTER or physician if you feel unwell (P302+P301+P312).					
Section 5- Fire Fighting Measures H					
G					NFPA Code
Flash point: 37 °C Flammable limits: Lower: 1.4% Upper: 11.2% Autoignition Temperature: 343 °C					H-2
When heated to decomposition, it may emit toxic fumes					F-3
IN CASE OF FIRE: Use triclass dry chemical fire extinguisher (P370+P378).					R-0
Section 6- Accidental Release Measures I					
Remove all ignition sources and ventilate the area. Contain the spill with sand or other inert absorbent material and deposit in a sealed bag or container. See Sections 8 and 13 for further information.					

B Signal words, either DANGER or WARNING, heighten the awareness of the risk when using certain chemicals.

C Eight Pictograms exist in the GHS classification scheme to call attention to physical and health hazards

F Seek medical attention. These first-aid measures are only meant for immediate first aid and should always be followed up with professional medical care.

H The NFPA code is the numerical code established by the National Fire Protection Association. It rates the substance *under fire conditions* in four categories. **Health Flammability, Reactivity, and Unusual reactivity** : 4 is a severe hazard, 0 is no hazard

I How to clean up a spill. Always remove unprotected personnel from area and ensure all students are safe. Contain the spill with sand or absorbent materials.



How to Read a Safety Data Sheet (SDS), continued

How can I prevent hazardous situations from occurring? (Sections 7-11)

K Wear personal protective equipment such as goggles, gloves, and an apron.

M Describes the conditions or reactions to be avoided. Also provides some indication about anticipated shelf life

N More detail on how the material may injure user. Acute and chronic effects are listed along with their target organs

Additional Information (Sections 12-15)

P Ecological impact if large amounts (e.g. tank car) of the chemical spill near a river or lake

R Department of Transportation shipping information is included for your school district, emergency responders, and transport/shipping departments.

Safety Data Sheet (SDS)

Section 7- Handling & Storage

Store with alcohols, glycols, amines, and amides. store in dedicated flammables cabinet. If a flammables cabinet is not available. Keep in a chemical safe store can. Keep container tightly closed, keep cool, and use only in a well-ventilated area or in a hood

J

J Use the suggested Chemical Storage Pattern to prevent accidents and improve safety. Special storage and usage tips are also included

Section 8- Exposure Controls & Person Protection

Wear protective gloves, protective clothing and eye protection. Wash thoroughly after handling. Use ventilation to keep airborne concentrations below exposure limits. Exposure guidelines: PEL 100 ppm (OSHA) TLV 20 ppm (ACGIH)

K

Section 9- Physical & Chemical Properties

L

Clear colorless liquid	Boiling point: 117.7 °C
Wine-like odor	Melting point: -89°C
Soluble: Water (20%)	Refractive index: 1.3988
Miscible with alcohol and ether	Specific gravity: 0.81

L Clear, concise, and useful physical and chemical properties help you learn more about the chemicals you use. The first part describes the material's appearance. If the description does not match, STOP. It may be more or less hazardous. DO NOT USE

Section 10- Stability & Reactivity

Avoid contact with aluminum, chromium trioxide, and oxidizing materials. Substance may develop explosive hydroperoxides. Shelf life: Fair, substance may oxidize. Refer to Section 7 for more information

M

Section 11- Toxicological Information

O

Acute effects: Absorbed through Eye, skin, respiratory tract.	ORL-RAT LD50: 50 790 mg/kg
Irritation	IHL-RAT LC50: 8000 ppm/4H
Dizziness	SKN-RBT LD50: 3400 mg/kg
CNS Depression	
Chronic Effects: N/A	
Target Organs: Eyes, skin, respiratory system, Central Nervous system	

O Oral (ORL), Inhalation (IHL), and skin absorption (SKN) toxicity data on test animals is included.

Section 12- Ecological Information

Data is not available at this moment

P

Section 13- Disposal Considerations

Q

Please review all federal, state, and local regulations that may apply before proceeding

Q Suggests disposal methods for laboratory quantities of chemicals

Section 14- Transport Information

Shipping name: Butanol. Hazard class: 3, Flammable liquid. UN number: UN1120

R

Section 15- Regulatory Information

S

TSCA-listed, EINECS-listed (200-751-6), RCRA code U031

S Regulatory information used by regulatory compliance personnel

The SDS is a guidance and is based upon information and tests believed to be reliable. We make no guarantee of the accuracy or completeness of the data and shall not be liable for any damages. The data is offered solely for your consideration, investigation, and verification. The data should not be confused with local, state, federal or insurance mandates, regulations, or requirements and constitute no warranty. Any use of this data and information must be determined by the science instructor to be in accordance with applicable local, state, or federal laws and regulations. The conditions or methods of handling, storage, use and disposal of the product(s) described are beyond our control. For this and other reasons we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product(s).