

**MATERIAL SAFETY DATA SHEET
DIVERSITECH
ATK-4, ATK-1 ACID TEST KIT**

CATALOG NO. ATK-4, ATK-1

SECTION I-IDENTIFICATION

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**HAZARD RATINGS
HMIS DATA**

HEALTH = 1	0 = NONE
FIRE = 3	1 = SLIGHT
REACTIVITY = 0	2 = MODERATE
	3 = HIGH
	4 = EXTREME
PERSONAL PROTECTION INDEX = B	

SECTION II HAZARDOUS INGREDIENTS INFORMATION

INGREDIENT	CAS NO	OSHA PEL	ACIGH TLV	OTHER STEL (ACIGH)	% or RNG
n-Butanol	71-63-3	100 PPM	Not established	50 PPM (Skin)	85-95
Water					5-15
Phenolsulphonthalein	143-74-8				>0.1

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: 117.4°C

Specific gravity (H₂O = 1): 0.86

Vapor pressure (mm Hg): 4.4 @ 25°C

Melting Point: -90°C

Vapor Density (Air=1): 2.5

Evaporation Rate (Ether = 1): 33

Solubility in water: 7.5 gm/100 ml

Viscosity: No data for mixture

Appearance and odor: Clear purple liquid with a sweet, rancid odor.

SECTION IV- FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 37°C (98°F) (TCC) Flammable Limits: LEL: 1.4% UEL: 11.2%

Extinguishing media: Use agents approved for Class B fires: dry chemical, CO₂, foam, water fog halon; use water spray for cooling only.

Special Fire Fighting Procedures: Keep containers cooled with a water spray if involved in a fire. Use a water fog or spray to reduce vapors. Incipient fire responders should wear eye protection; structural fire responders self-contained breathing apparatus and full protective equipment. If n-butanol is involved in a fire, the fire runoff water should be contained to minimize environmental damage

Unusual Fire and Explosion Hazards: n-Butanol is a Class 1B flammable liquid; if involved in a fire, it may decompose into toxic compounds including carbon dioxide and carbon monoxide. The vapors are heavier than air, and may spread long distances; distant ignition and flashback are possible. Static discharge may cause vapors of n-butanol and air to ignite.

SECTION V – REACTIVITY DATA

Stability-Stable at standard temperature and pressure

Conditions to avoid: Contact with incompatible materials and exposure to heat, sparks and other sources of ignition.

Incompatibility (Materials to avoid): Strong oxidizers, strong reducing agents, acid chlorides and anhydrides, copper and aluminum and alloys of the metals and chromium trioxide.

SECTION V – REACTIVITY DATA continued

Decomposition products: Normal burning forms carbon dioxide and water. Incomplete burning can produce carbon monoxide.

Hazardous Polymerization: Will not occur.

SECTION VI– HEALTH HAZARD DATA

Routes of Entry: Inhalation: yes Skin: yes Ingestion: yes Eyes: yes

Health Hazards:

Acute: Inhalation of vapors may cause headache, dizziness, drowsiness, incoordination, confusion and unconsciousness. Severe inhalation overexposure to n-butanol may be fatal. Contamination of skin or eyes may be irritating. Ingestion overexposure can cause headache, dizziness, confusion, nausea, vomiting, difficult breathing, unconsciousness and coma. Severe ingestion overexposure may be fatal. Chronic Prolonged or repeated over exposure can cause contact dermatitis (dry, cracked, red skin).

Carcinogenicity: NTP? no IARC Monographs? no OSHA Regulated? No

Nature of Hazard/Signs and symptoms of exposure:

Inhalation: Inhalation of n-butanol vapors can irritate the mucous membranes. Inhaling low concentrations may cause dizziness, headache drowsiness, incoordination and confusion. Inhaling high concentrations may cause unconsciousness. Severe overexposure by inhalation may be fatal. Avoid breathing vapors, spray or mists.

Skin: n-Butanol may be absorbed through the skin. Symptoms similar to those seen for “Inhalation” may occur.

Ingestion: Do not take internally. If ingested, n-Butanol can cause headache, dizziness, drowsiness, incoordination, confusion and unconsciousness and coma. If ingested, n-butanol may be aspirated into the lungs and cause severe lung damage, respiratory arrest and cardiac arrest. Severe overexposure from ingestion may be fatal

Eyes: Depending on the duration of contact and the concentration of overexposure, contact of liquid or vapor of n-butanol with the eyes may cause tearing, redness, irritation, blurred vision, corneal inflammation and light sensitivity.

Medical Conditions Aggravated by Exposure: Contact or breathing mists may exacerbate existing skin or respiratory disorders.

Emergency and First Aid Procedures:

Eyes: Flush with water for 15 minutes Gently force eyelids open and flush the area behind the eyelid while the victim “rolls” the eyes. Get medical attention.

Skin: Remove contaminated clothing. Wash the affected area with soap and water. Launder or dry clean clothes before reuse. Discard contaminated leather articles. Get medical attention if any adverse reaction occurs. If the product is injected into or under the skin, physician should treat the individual as a surgical emergency.

Inhalation: Using proper respiratory protection, immediately remove the affected victim from exposure. Evacuate to a safe area with plenty of fresh air. Administer artificial respiration if breathing has stopped. Keep at rest. Call for medical aid immediately.

Ingestion: DO NOT induce vomiting. Call the nearest poison control center immediately. Drink 2-3 cups of milk or water or egg whites if medical help is not available. If vomiting occurs naturally, have the victim lean forward to minimize the risk of aspiration. **Never induce vomiting or give diluents (water or milk) to someone who is unconscious, having convulsions or unable to swallow.**

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND STORAGE

STEPS TO BE TAKEN IF MATERIAL IS SPILLED OR RELEASED:

Floors may be slippery; use care to avoid falling. Remove unnecessary personnel from the area. Remove or inactivate any sources of ignition. Dike the spill immediately with inert materials to prevent the spread of liquid. Absorb the liquid with an inert absorbent such as sand, dirt, vermiculite or “oil-dri”, or use commercial oil absorbent pads, or remove liquid mechanically. Transfer absorbed material to suitable containers, and dispose of in accordance with local, state, and federal regulations.

WASTE DISPOSAL METHODS: Disposal must comply with applicable local state and federal regulations. Determine the waste classification at the time of disposal. Conditions of use may render the spent product a hazardous waste. Enclosed/ controlled incineration is recommended unless otherwise directed by applicable ordinances.

HANDLING AND STORAGE:

Keep containers closed when not in use. Store this product in a dry, cool, well-ventilated area. Keep this and all chemicals out of the reach of children. Use only in a well-ventilated area, away from sources of ignition. Do not contaminate food or feed through the use, storage or disposal of this product.

EMPTY CONTAINERS: The container for this product can present explosion or fire hazards, even when emptied. To avoid the risk of injury, do not cut, puncture or weld on or near this container. Since the empty container contains product residue, follow label warnings even after the container is emptied.

SECTION VIII – CONTROL MEASURES

Respiratory Protection (Specify Type): Use in a well-ventilated area. If mist or vapor is being generated and exceeds the TLV, a respiratory program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. The IDLH for n-Butanol is 1400 ppm.

Ventilation: Local exhaust is recommended when used in enclosed areas, or if the product is heated or agitated. Where concentrations in air may exceed the limits given, and engineering, work practice, or other means of exposure reduction are not adequate, use a NIOSH approved air purifying respirator to limit exposure by inhalation.

Protective Gloves: Neoprene or nitrile gloves are recommended to minimize skin contact hazard. Other materials may be used if there is documented evidence of compatibility.

Eye protection: Where contact may occur, or is likely, wear safety glasses with side shields (ANSI Z87.1) or approved equivalent.

Other Protective Clothing: Not required for normal use.

Work Hygienic Practices: Use proper industrial hygiene practices to minimize hazardous exposure. Wash hands after handling this material, and before eating or smoking. An emergency eyewash should be available where this product is stored or used.

SECTION IX – ADDITIONAL INFORMATION

Transportation Information:

DOT HAZARD LABEL: Flammable

DOT Description: Flammable Liquid, N.O.S. (Ethanol, Isopropanol & Toluene), Class 3, UN 1993, PG III

U.S. Surface Freight Classification: Alcohol, Butyl, NMFC#42690-2, Freight class 65

FOR DOMESTIC TRANSPORT ONLY: Consumer Commodity, ORM-D

SECTION IX – ADDITIONAL INFORMATION continued

TSCA: This product is listed on the TSCA Inventory.

SARA TITLE III Reporting Requirements:

Section 302: EHS reporting not required

Section 304: Hazardous release reporting is required

Section 311: Not applicable

Section 312: Not applicable

Section 313: Emissions and release reporting may be required for users of this product within the manufacturing sector. This does not apply to service companies.

OSHA Hazard Communication Standard:

n-Butanol is subject to the reporting requirements of 29 CFR 1910.1200. It is listed in Table Z.1.

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