

Material Safety Data Sheet

1,3 BUTADIENE

Revision 9/04

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Advanced Gas Technologies
1401 Stauffer Road
Palm, PA 18070.

Telephone Number: (215) 541-4116

MSDS IDENTIFICATION CODE / NUMBER: BD

EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300

PRODUCT NAME: 1,3 BUTADIENE

SYNONYMS: trans-butadiene, Bivinyll, Divinyll, Erythrene, Vinylyethylene, Biethylene, Butadiene Monomer, Pyrrolylene

CAS NUMBER: 106-99-0

RTECS No.: EI9275000

CHEMICAL FAMILY: Diolefin

CHEMICAL FORMULA: C₄H₆; H₂C=CHCH=CH₂

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	EXPOSURE LIMITS	CONCENTRATION PERCENT BY WEIGHT
1, 3 BUTADIENE	ACGIH (TLV) - 10 ppm	<100.0
CAS NUMBER: 106-99-0	ACGIH (STEL) 10 ppm	
	OSHA (PEL) 2 ppm	

3. HAZARDS IDENTIFICATION

NO DATA GIVEN

4. FIRST AID MEASURES

INHALATION

Conscious persons should be assisted to an uncontaminated area and treated with supplemental oxygen. Quick removal from the contaminated area is most important. Unconscious persons should be moved to an uncontaminated area and given artificial respiration and oxygen at the same time. Medical Assistance should be sought out immediately.

Dermal Contact or Frostbite: Remove contaminated clothing and flush affected areas with lukewarm water. DO NOT USE HOT WATER. A physician should see the patient promptly if the cryogenic "burn" has resulted in blistering of the dermal surface or deep tissue freezing.

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PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVER EXPOSURE TO 1, 3 BUTADIENE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: -105 F -76 C Closed cup.

AUTOIGNITION: 788 F 420 C

LOWER EXPLOSIVE LIMIT: (%): 2

UPPER EXPLOSIVE LIMIT: (%): 12

FIRE AND EXPLOSION HAZARDS

1,3 Butadiene is heavier than air and may travel a considerable distance to a source of ignition. Should flame be extinguished and flow of gas continue, increase ventilation to prevent flammable mixture formation in low areas or pockets.

Electrical Classification: Class 1, Group B

EXTINGUISHING MEDIA

Water, dry chemical or carbon dioxide.

FIRE FIGHTING INSTRUCTIONS

If possible, stop the flow of gas; use water spray to cool surrounding containers.

6. ACCIDENTAL RELEASE MEASURES

Evacuate all personnel from affected areas. Use appropriate protective equipment. If leak is in user's equipment, be certain to purge piping with an inert gas prior to attempting repairs. If leak is in container or container valve, contact CHEMTREC for emergency assistance or call ADVANCED GAS TECHNOLOGIES.

PROMPT MEDICAL ATTENTION IS MANDATORY IN ALL CASES OF OVER EXPOSURE. RESCUE PERSONNEL SHOULD BE EQUIPPED WITH SELF-CONTAINED BREATHING APPARATUS.

7. HANDLING AND STORAGE

HANDLING AND STORAGE PRECAUTIONS

Use only in well-ventilated areas. Valve protection caps must remain in place unless container is secured with valve outlet piped to use point. Do not drag, slide or roll cylinders. Use a suitable hand truck for cylinder movement. Do not heat cylinder by any means to increase rate of product from cylinder. Use check valve or trap in the discharge line to prevent Hazardous back flow into cylinder.

Protect cylinder from physical damage. Store it in a cool, dry, well ventilated area of non-combustible construction. Keep away from heavily trafficked areas and emergency exits. Do not allow temperature where cylinders are being stored to exceed 130 F. Cylinders should be stored upright and firmly secured to prevent from falling or being knocked over. Full and empty cylinders should be segregated. Use "first in -first out" inventory system to prevent full cylinder from being stored for excessive periods of time.

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Earth-ground and bond all lines and equipment associated with the carbon monoxide system. Electrical equipment should be non-sparking or explosion proof. Compressed gas cylinders should not be refilled except by qualified producers of compressed gases. Shipment of a compressed gas cylinder which has not been filled by the owner or with his (written) consent is in violation of Federal Law (49CFR).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Hood with forced ventilation. Use local ventilation to prevent accumulation above the exposure limit. Use general mechanical ventilation in accordance with electrical codes.

EYE / FACE PROTECTION

Safety goggles or glasses

SKIN PROTECTION

Plastic or rubber.

RESPIRATORY PROTECTION

Positive pressure air line with mask or self contained breathing apparatus should be available for emergency use.

OTHER / GENERAL PROTECTION

Safety shoes, safety shower, eyewash "fountain".

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

A colorless gas.

ODOR

A sharp aromatic odor .

BASIC PHYSICAL PROPERTIES

BOILING POINT:	24 F	4.5 C
FREEZING POINT:	-164.06 F	-108.92 C
VAPOR PRESSURE:	21.4 psig @70 F	
SPECIFIC GRAVITY:	1.94	
SOLUBILITY (H2O):	6.07	

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY)

1,3 Butadiene is shipped with an inhibitor to prevent polymerization

INCOMPATIBLE MATERIALS

Strong oxidizers, ozone, nitrogen dioxide, copper, Phenol

HAZARDOUS DECOMPOSITION PRODUCTS

Toxic gases such as carbon monoxide and carbon dioxide may be released in a fire.

HAZARDOUS POLYMERIZATION:

May result when Butadiene comes in contact with air.

11. TOXICOLOGICAL INFORMATION

ACUTE INHALATION EFFECTS

Moderate concentrations cause dizziness, drowsiness, blurring of vision and nausea. In higher concentrations, it is an anesthetic and can cause respiratory paralysis and death.

MISCELLANEOUS TOXICOLOGICAL INFORMATION

It is an asphyxiate and anesthetic causing respiratory paralysis in high concentrations. Repeated exposures have given no indication of cumulative action. Vapors cause skin rash and are irritating to the eyes and mucus membranes.

The International Agency for Research on Cancer (IARC) has concluded that Butadiene is an animal carcinogen.

Frostbite effects are a change in color of the skin to gray or white possibly followed by blistering.

MISCELLANEOUS TOXICOLOGICAL INFORMATION

Carcinogenicity: **NTP:** Yes **IARC:** Yes **OSHA:** No

12. ECOLOGICAL INFORMATION

NO DATA GIVEN

13. DISPOSAL INFORMATION

Do not attempt to dispose of waste or unused quantities. Return in the shipping container PROPERLY LABELED, WITH ANY VALVE OUTLET PLUGS OR CAPS SECURED AND VALVE PROTECTION CAP IN PLACE to Advanced Gas Technologies for proper disposal.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME: Butadiene, Stabilized

HAZARD CLASS: Flammable Gas

DOT IDENTIFICATION NUMBER: UN1010

DOT SHIPPING LABEL: Flammable Gas

15 REGULATORY INFORMATION

None given.

