



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 08/01/2000
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Version 1.0

Section 1 - Product and Company Information

Product Name VALERALDEHYDE, 97%
Product Number 110132
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country St. Louis, MO, 63103, US
Technical Phone: 314 771 5765
Fax 800 325 5052

Emergency Phone: 414 273 3850 Ext.5996

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>
N-VALERALDEHYDE	110-62-3	No

Formula C₅H₁₀O
Synonyms Amyl aldehyde, Butyl formal, Pentanal, n-Pentanal, Valeric aldehyde, Valeral, n-Valeraldehyde (ACGIH), Valerianic aldehyde, Valeric acid aldehyde, n-Valeric aldehyde, Valerylaldehyde

Section 3 - Hazards Identification

Emergency Overview

Flammable (USA) Highly Flammable (EU). Irritant.
Irritating to eyes, respiratory system, and skin.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Immediate Treatment - Work Site

In case of contact, immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Section 5 - Fire Fighting Measures

Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back.
Container explosion may occur under fire conditions.
Forms explosive mixtures in air.

Flash Point: 39.2 °F 4 °C

Explosion Limits: Lower: 2.1 %

Autoignition Temp: 220 °C

Flammability: N/A

Extinguishing Media

Suitable

Carbon dioxide, dry chemical powder, or appropriate foam.

Unsuitable

Water may be effective for cooling, but may not effect extinguishment.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Vapor may travel considerable distance to source of ignition and flash back.

Specific Method(s) of Fire Fighting

Use water spray to cool fire-exposed containers.

Exposure Hazard(s)

Material

Irritant.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area. Shut off all sources of ignition.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Cover with an activated carbon adsorbent, take up and place in closed containers. Transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe vapor. Avoid contact with eyes, skin, and clothing.

Storage

Suitable

Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls

Mechanical exhaust required. Safety shower and eye bath. Use nonsparking tools.

Personal Protective Equipment

Other

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures

Wash thoroughly after handling. Remove and wash contaminated clothing promptly.

Exposure Limits, RTECS

<u>Country</u>	<u>Source</u>	<u>Type</u>	<u>Value</u>	<u>Remarks</u>
USA	ACGIH	TWA	176 MG/M3 (50 PPM)	
New Zealand	OEL			check ACGIH TLV

Section 9 - Physical/Chemical Properties

Appearance**Color**
Colorless**Form**
Clear liquid**Molecular Weight:** 86.13 AMU

<u>Property</u>	<u>Value</u>
pH	N/A
BP/BP Range	100 - 103 °C
MP/MP Range	-92 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	0.81 g/cm3
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	39.2 °F
Flash Point °C	4 °C
Explosion Limits	Lower: 2.1 %
Autoignition Temp	220 °C
Refractive Index	1.3942
Solubility	N/A

Section 10 - Stability and Reactivity

Stability**Materials to Avoid**

Oxidizing agents, Strong bases, Strong reducing agents.

Hazardous Decomposition Products**Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide.

Section 11 - Toxicological Information

Route of Exposure**Skin Contact**

Causes skin irritation.

Multiple Routes

May be harmful by inhalation, ingestion, or skin absorption. Vapor or mist is irritating to the eyes, mucous membranes, and upper respiratory tract.

RTECS Number: YV3600000**Toxicity Data**

Oral - Rat: 5660 UL/KG (LD50)

Intraperitoneal - Rat: 400 MG/KG (LD50)
Remarks: Behavioral:Muscle weakness.
Behavioral:Ataxia.

Oral - Mouse: 6,400 mg/kg (LD50)

Intraperitoneal - Mouse: 200 MG/KG (LD50)
Remarks: Behavioral:Somnolence (general depressed activity).
Behavioral:Muscle weakness.
Behavioral:Ataxia.

Skin - Rabbit: 5 ML/KG (LD50)
Remarks: Skin and Appendages:Skin: After systemic exposure: Dermatitis, other

Skin - Guinea pig: 20,000 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 500 mg 24H
Remarks: Moderate irritation effect

Eyes - Rabbit: 100 mg 24H
Remarks: severe irritation effect

Skin - Guinea pig: 100 %
Remarks: severe irritation effect

Chronic Exposure - Mutagen

<u>Species</u>	<u>Dose</u>	<u>Cell Type</u>	<u>Mutation test</u>
Rat	3 UMOL/L	liver	Unscheduled DNA synthesis
Hamster	10 MMOL/L	lung	Mutation in mammalian somatic cells.

Section 12 - Ecological Information

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Valeraldehyde

UN#: 2058

Class: 3

Packing Group: Packing Group II

PIH: Not PIH

IATA

Proper Shipping Name: Valeraldehyde

IATA Number: 2058

Hazard Class: 3

Packing Group: II

Section 15 - Regulatory Information

US Classification and Label Text

Indication of Danger

Flammable (USA) Highly Flammable (EU). Irritant.

Risk Statements

Irritating to eyes, respiratory system, and skin.

Safety Statements

Keep container tightly closed in a cool well-ventilated place. Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

United States Regulatory Information

SARA 313 Listed: No

TSCA Inventory Item: Yes

Section 16 - Other Information

Warranty