

HEALTH	2
FLAMMABILITY	3
REACTIVITY	0

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Product identifiers

Product Name	<b>Isobutyraldehyde, Natural</b>
Product Number	<b>0222000</b>
CAS-No.	<b>78-84-2</b>

**1.2 Product Recommended Use**      **Flavorings**

### 1.3 Preparation Information

Company	Aurochemicals 7 Nicoll Street Washingtonville, NY 10992- USA
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Telephone	845-496-6065
Fax	845-496-6248

**1.4 Emergency Telephone Number**      1-800-535-5053  
International - 1-352-323-3500 collect

## Section 2: HAZARD(s) IDENTIFICATION

### 2.1 Classification of substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)	Flammable liquids (Category 2), H225 Eye irritation (Category 2A), H319 Acute aquatic toxicity (Category 3), H402
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### 2.2 GHS Label Elements, Including precautionary statements

Pictogram



Signal Statement	<b>DANGER</b>
Hazard Statement(s)	

	H225	Highly flammable liquid and vapor
	H319	Causes serious eye irritation
	H402	Acute aquatic toxicity
Precautionary Statement(s)	P210	Keep away from heat/sparks/open flames/hot surfaces – No smoking
	P233	Keep container tightly closed
	P240	Ground/bond container and receiving equipment
	P241	Use explosion proof electrical/ventilating/lighting/equipment
	P242	Use only non sparking tools
	P243	Take precautionary measures against static discharge
	P264	Wash skin thoroughly after handling
	P273	Avoid release to the environment
	P280	Wear protective gloves/protective clothing/eye protection/face protection

P303+P361+P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention
P370+P378	In case of fire: Use dry sand, dry chemical or alcohol resistant foam for extinction.
P403+P235	Store in a well ventilated area. Keep cool.
P501	Dispose of contents/container to an approved waste disposal plant.

2.3 **HNOC (Hazards not otherwise classified or not covered by GHS)** None

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 **Substances**  
 Synonyms 2-Methylpropionaldehyde

Formula C<sub>4</sub>H<sub>8</sub>O  
 Molecular Weight 72.11 g/mol  
 CAS-No 78-84-2  
 EC-No. 201-149-6

#### Hazardous Components

Component	Classification	Concentration
Isobutyraldehyde	Flammable liquids (2), H225 Eye irritation (2A), H319 Acute aquatic toxicity (3), H402	90-100%

### Section 4: FIRST AID MEASURES

4.1 **Description of first aid measures**

General Advice Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Inhalation Provide fresh air; keep at rest and at a comfortable position to breathe. Consult a physician

Contact with skin: Remove contaminated clothing. Rinse skin with cool water then wash with mild soap and warm water. Consult a physician

Contact with eyes: Rinse thoroughly with plenty of water for at least 15 minutes as a precaution. Consult a physician.

Ingestion DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Clothing contamination: Remove contaminated clothing and wash before reuse.

4.2 **Most important symptoms and effects both acute and delayed** See section 2.2 and or section 11

4.3 **Indication of any immediate medical attention and special treatment needed.** No data available

### Section 5: FIREFIGHTING MEASURES

5.1 **Extinguishing Media**  
 Suitable Extinguishing Media Use water spray, alcohol resistant foam, dry chemical or carbon dioxide

5.2 **Special hazards arising from the substance or mixture** Carbon oxides

- 5.3 **Advice for fire fighters** Wear self contained breathing apparatus for firefighting if necessary. Emits toxic fumes under fire conditions.
- 5.4 **Further information** Use water spray to cool unopened containers.

## Section 6: ACCIDENTAL RELEASE MEASURES

- 6.1 **Personal precautions, protective equipment and emergency procedures** Use personal protective equipment. Avoid breathing vapors. Mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. **Vapors can accumulate in low areas.**
- 6.2 **Environment precautions** Prevent further leakage or spillage if safe to do so. Do not allow to enter drains or sewage system. Discharge into the environment must be avoided.
- 6.3 **Methods and materials for containment and clean up** Contain spillage. Wet Sweep up with broom and place in a suitable, closed container for disposal.
- 6.4 **Specific end use(s)** Apart from the uses mentioned in section 1.2, no other specific uses are stipulated.

## Section 7: HANDLING AND STORAGE

- 7.1 **Precautions for safe handling** Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition-No smoking. Take measures to prevent the buildup of electrostatic charge.
- 7.2 **Conditions for Safe storage** Keep container tightly closed in a dry and well-ventilated place. Containers which have been opened must be carefully resealed and kept upright to prevent leakage.
- 7.3 **Specific End use(s)** Flavorings

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.:	Value	Control Parameters	Basis
Isobutyraldehyde	78-84-2	TWA	25 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

### 8.2 Exposure Controls

- Appropriate Engineering Controls** Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.
- Personal protective equipment** **These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situations of anticipated use by our customers. They should not be construed as offering an approval or any specific use scenario.**
- Eye/face protection** Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
- Skin protection** Wear chemically resistant Butyl rubber gloves, 0.3mm. Use proper glove removal techniques (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use. Wash and dry hands.
- Body protection** Complete suit of flame retardant, antistatic material, protecting against chemicals should be selected specifically for the work place, depending on concentration and quantity of

the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier

**Respiratory protection** Where risk assessment shows air-purifying respirators are appropriate, use a full face respirator with multi-purpose combination (U) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full faced supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (U) or CEN (EU).

**Control of environmental exposure** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

a	Appearance	Clear colorless to pale yellow liquid
b	Odor	Pungent, fruity, over-ripe banana top notes
c	Odor Threshold	No data available
d	pH	No data available
e	Melting Point /Freezing Point	Melting Point: -65°C
f	Boiling Point	64°C
g	Flash Point	-19°C closed cup
h	Evaporation Rate	No data available
i	Flammability (Solid, Gas)	No data available
j	Upper/lower Flammability Limit	Upper explosion limit: 11% (V), Lower explosion limit: 1.6% (V)
k	Vapor pressure	88 hPa at 4.4°C
l	Vapor density	2.49 (Air = 1.0)
m	Relative density @25°C	0.783-0.800
n	Solubility	Miscible with alcohol and ether, soluble in water (1:125)
o	Partition coefficient: n-octanol/water	log Pow: 0.77
p	Auto-ignition Temp.	180°C at 1,013.25 hPa
q	Decomposition Temp,	No data available
r	Viscosity	No data available
s	Explosive properties	No data available
t	Oxidizing properties	No data available

**9.2 Other Safety Information** No data available

## Section 10: STABILITY AND REACTIVITY

<b>10.1 Reactivity</b>	No data available
<b>10.2 Chemical Stability</b>	Stable under recommended storage conditions
<b>10.3 Possibility of Hazardous reactions</b>	Vapors may form explosive mixture with air
<b>10.4 Conditions to avoid</b>	Heat, Flames and Sparks. Extremes of temperatures and direct sunlight
<b>10.5 Incompatible materials</b>	Strong oxidizing agents, strong bases, strong reducing agents
<b>10.6 Hazardous decomposition products</b>	No data available
<b>10.7 Further Information</b>	No data available

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute Toxicity

LD50-Oral- Rat -Female	3,730 mg/kg
LC50-Inhalation-Rat-Male	>23.9 mg/l 4h
LD50-Dermal-Rabbit-Male	6,630 mg/kg
Skin corrosion/irritation	Rabbit –No skin irritation 4 h (OECD Test Guideline 404)
Serious eye damage/eye irritation	Rabbit- Irritating to eyes 24 hr (OECD Test Guideline 405)
Respiratory or skin sensitization	Mouse- in vivo assay Results: Does not cause skin sensitisation
Germ Cell mutagenicity	Mouse-Male: Ames Test: S.typhimurium      Results: Negative

#### Carcinogenicity

IARC No component of this product, present levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH No component of this product, present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP No component of this product, present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA No component of this product, present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

#### Reproductive toxicity

Reproductive Toxicity: Rat-Inhalation: Maternal Effects: Other effects  
Developmental Toxicity: Rat-Inhalation: No adverse effect has been observed in chronic toxicity tests.

Specific target organ toxicity-single exposure (GHS) No data available

Specific target organ toxicity-repeated exposures (GHS) No data available

Aspiration Hazards No data available

Signs and Symptoms of Exposure To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Additional Information Repeated dose toxicity: Rat-Male/Female: Inhalation (Vapor)

RTECS: NQ4025000

## Section 12: ECOLOGICAL INFORMATION

### 12.1 Toxicity

#### To Fish:

LC50-Static Test: Pimephales promelas (fathead minnow) 23 mg/l 96hr

#### To daphnia and other aquatic invertebrates:

EC50-Static Test: Daphnia magna (Water flea) – 277 mg/l 48 hr

#### Toxicity to algae:

EC50-Static Test: Desmodesmus subspicatus (Scenedesmus subspicatus) 83.7 mg/l 72 hr

#### Toxicity to bacteria:

EC50-Growth Inhibition: Pseudomonas putida – 468 mg/l 17 hr

<b>12.2 Persistence and degradability</b>	Biodegradability: Aerobic – Exposure time 14 days Results: 80-90% Readily biodegradable (OECD Test Guideline 301C)
<b>12.3 Bioaccumulative potential</b>	No data available
<b>12.4 Mobility in soil</b>	No data available
<b>12.5 Results of PBT and vPvB assessment</b>	PBT/vPvB assessment not available as chemical safety assessment not required / not conducted
<b>12.6 Other adverse effects</b>	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

## Section 13: DISPOSAL CONSIDERATIONS

<b>13.1 Disposal methods</b>	
Product:	According to local regulations
Packaging	According to local regulations

## Section 14: TRANSPORT INFORMATION

<b>DOT (US)</b>	UN Number: 2045 Class: 3 Packing Group II
Proper Shipping Name	Isobutyl Aldehyde
Reportable Quantity (RQ)	No
Marine pollutant	No
Poison Inhalation Hazard	No
<b>IMDG</b>	UN Number: 2045 Class: 3 Packing Group II EMS-No: F-E, S-D
Proper Shipping Name	ISOBUTYL ALDEHYDE
Marine Pollutant	No
<b>IATA</b>	UN Number: 1989 Class: 3 Packing Group II
Proper Shipping Name	Isobutyl Aldehyde

## Section 15: REGULATORY INFORMATION

SARA 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302		
SARA 313 Components	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.		
SARA 311/312 Hazards	Fire Hazard, Acute Health Hazard		
Massachusetts Right to Know components	Isobutyraldehyde	CAS# 78-84-2	Rev. Date: 7/1/2007
Pennsylvania Right to Know components	Isobutyraldehyde	CAS# 78-84-2	Rev. Date: 7/1/2007
New Jersey Right to Know components	Isobutyraldehyde	CAS# 78-84-2	Rev. Date: 7/1/2007
California Prop. 65 components	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.		

# Safety Data Sheet

## Section 16: OTHER INFORMATION

### HMIS Rating

Health hazard 2  
Chronic Health Hazard  
Flammability 3  
Reactive Hazard 0

### Further Information

Aurochemicals provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Aurochemicals makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly, Aurochemicals will not be responsible, nor held liable, for damages resulting from use of or reliance upon this information.

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