

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier**Product name:** Eastman(TM) Isobutyric Acid**Product No.:** EAN 900785. E0088705**Additional identification****Chemical name:** 2-methylpropanoic acid**CAS-No.:** 79-31-2**Relevant identified uses of the substance or mixture and uses advised against****Identified uses:** Chemical Intermediate**Uses advised against:** None known.**Details of the supplier of the safety data sheet****Manufacturer / Supplier**Eastman Chemical Company
200 South Wilcox Drive
Kingsport, TN 37660-5280 US
+14232292000Visit our website at www.EASTMAN.com or email emnmsds@eastman.com**Emergency telephone number:**

For emergency health, safety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

SECTION 2: Hazards identification

Hazard classification:**Physical hazards**

Flammable liquids Category 3

Health hazards

Acute toxicity (Oral) Category 4

Acute toxicity (Dermal) Category 3

Skin corrosion/irritation Category 1B

Serious eye damage/eye irritation Category 1

OSHA Specified Hazards: not applicable**Warning label items including precautionary statement:****Pictogram:**



Signal words: DANGER!

Hazard Statement(s): H226: Flammable liquid and vapor.
H302: Harmful if swallowed.
H311: Toxic in contact with skin.
H314: Causes severe skin burns and eye damage.

Precautionary statement:

Prevention: P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.

Response: 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.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310: Immediately call a POISON CENTER or doctor/physician.
P363: Wash contaminated clothing before reuse.
P370+P378: In case of fire; Use water spray, carbon dioxide, dry chemical or alcohol foam for extinction.

Storage: P403+P235: Store in a well-ventilated place. Keep cool.

Disposal: P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None known.

SECTION 3: Composition/information on ingredients

Substances / Mixtures

General information:

Chemical name	Concentration	Additional identification	Notes
isobutyric acid	100%	CAS-No.: 79-31-2	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
This substance has workplace exposure limit(s).

SECTION 4: First aid measures

Description of first aid measures

Inhalation:	Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician or poison control center immediately. Wash contaminated clothing before reuse. Destroy contaminated clothing and shoes.
Ingestion:	Call a physician or poison control center immediately. Do NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.

Most important symptoms and effects, both acute and delayed: May irritate and cause redness and pain.

Indication of any immediate medical attention and special treatment needed

Hazards:	None known.
Treatment:	Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards:	Flammable liquid and vapor.
Extinguishing media	
Suitable extinguishing media:	Water spray. Dry chemical. Carbon Dioxide. Alcohol foam.
Unsuitable extinguishing media:	None known.
Special hazards arising from the substance or mixture:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.
Advice for firefighters	
Special fire fighting procedures:	Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters:

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures:**

Wear appropriate personal protective equipment.

Environmental precautions:

Avoid release to the environment.

Methods and material for containment and cleaning up:

Eliminate sources of ignition. Neutralize spill area and washings with soda ash or lime. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

Notification Procedures:

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

SECTION 7: Handling and storage:**Precautions for safe handling:**

Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Do not taste or swallow. Wash thoroughly after handling. Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Keep container tightly closed and in a well-ventilated place.

Specific end use(s):

Chemical Intermediate

SECTION 8: Exposure controls/personal protection**Control parameters****Occupational exposure limits**

Country specific exposure limits have not been established or are not applicable unless listed below.

Exposure controls**Appropriate engineering controls:**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment**General information:**

Eye bath. Safety shower. Washing facilities.

Eye/face protection:

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection**Hand protection:**

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Other:

No data available.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Hygiene measures:

Observe good industrial hygiene practices.

Environmental Controls:

No data available.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance****Physical State:**

Liquid

Form:

Liquid

Color:

colorless

Odor:

Pungent

Odor Threshold:

No data available.

pH:

2.3 (25 °C)

Freezing Point:

-64 °C

Boiling Point:

156 °C

Flash Point:

56 - 62 °C (closed cup)

Evaporation Rate:

No data available.

Flammability (solid, gas):

Not applicable

Flammability Limit - Upper (%)—:

No data available.

Flammability Limit - Lower (%)—:

No data available.

Vapor pressure:

2 hPa (20 °C)

Vapor density (air=1):

3

Specific Gravity:

0.9477 (20 °C)

Solubility(ies)**Solubility in Water:**

618 g/l (20 °C)

Solubility (other):

No data available.

Partition coefficient (n-octanol/water):

Pow: 12.6 log Pow: 1.1

Autoignition Temperature:

455 °C

Decomposition Temperature:

No data available.

Dynamic Viscosity:

1.322 mPa.s (20 °C)

Kinematic viscosity:

1.395 mm²/s (20 °C)

Explosive properties:	Not classified
Oxidizing properties:	Not classified

SECTION 10: Stability and reactivity

Reactivity:	None known.
Chemical stability:	Stable
Possibility of hazardous reactions:	None known.
Conditions to avoid:	Heat, sparks, flames.
Incompatible materials:	Strong oxidizing agents.
Hazardous decomposition products:	Carbon Dioxide. Carbon Monoxide.

SECTION 11: Toxicological information**Information on likely routes of exposure**

Inhalation:	None known.
Ingestion:	Harmful if swallowed. May cause burns of the gastrointestinal tract if swallowed.
Skin contact:	Causes severe skin burns. Toxic in contact with skin.
Eye contact:	Causes serious eye damage.

Information on toxicological effects**Acute Toxicity****Oral**

Product:	Oral LD-50: (Rat): 2,230 mg/kg
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Dermal

Product:	Dermal LD-50: (Rabbit): 474 mg/kg
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Inhalation

Product:	LCLo (Rat, 8 h): 9.59 mg/l
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Repeated dose toxicity

Product:	NOEL (Rat, Oral Study, 90 d): 316 mg/kg Read-across from a similar material
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Skin corrosion/irritation:

Product:	(Rabbit, 1 h): Severe
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Serious eye damage/eye irritation:

Product:	(Rabbit): Strongly irritating.
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Respiratory or skin sensitization:

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Mutagenicity

In vitro

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

In vivo

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Carcinogenicity

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Reproductive toxicity

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Aspiration hazard

Product: No data available.

Specified substance(s)
isobutyric acid No data available.

Other adverse effects: No data available.

SECTION 12: Ecological information

Toxicity

Acute toxicity

Fish

Product: LC-50 (Fish, 96 h): 146.6 mg/l

Aquatic invertebrates**Product:** EC-50 (daphnid, 48 h): 51.25 mg/l**Chronic Toxicity****Fish****Product:** No data available.**Specified substance(s)**

isobutyric acid No data available.

Aquatic invertebrates**Product:** No data available.**Specified substance(s)**

isobutyric acid No data available.

Toxicity to Aquatic Plants**Product:** EC-50 (Alga, 72 h): 45 mg/l**Persistence and degradability****Biodegradation****Product:** > 95 % Readily biodegradable**Biological Oxygen Demand:****Product** No data available.**Specified substance(s)**

isobutyric acid No data available.

Chemical Oxygen Demand:**Product** No data available.**Specified substance(s)**

isobutyric acid No data available.

BOD/COD ratio**Product** No data available.**Specified substance(s)**

isobutyric acid No data available.

Bioaccumulative potential**Product:** No data available.**Specified substance(s)**

isobutyric acid No data available.

Mobility in soil:

No data available.

Known or predicted distribution to environmental compartments

isobutyric acid 1.65 (QSAR model)

**Results of PBT and vPvB
assessment:**

Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria

Other adverse effects:

No data available.

SECTION 13: Disposal considerations**Waste treatment methods**

General information: No data available.

Disposal methods: Dispose of waste and residues in accordance with local authority requirements. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

SECTION 14: Transport information

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT

Reportable Quantity: 2,270 kg (ISOBUTYRIC ACID)
Possible Shipping Description(s):

UN 2529 Isobutyric acid 3 (8) III

IMDG - International Maritime Dangerous Goods Code

Possible Shipping Description(s):

UN 2529 ISOBUTYRIC ACID 3 (8) III

IATA

Possible Shipping Description(s):

UN 2529 Isobutyric acid 3 (8) III

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS (Canada) Status: controlled

WHMIS (Canada) Hazard Classification: B/3, D/1/B, E

SARA 311-312 Hazard Classification(s):immediate (acute) health hazard
fire hazard**US EPCRA (SARA Title III) Section 313 - Toxic Chemical List**

NONE

OSHA: hazardous**TSCA (US Toxic Substances Control Act):** This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.**DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act):** This product is listed on the DSL. Any impurities present in this product are exempt from listing.**AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme):** This product is listed on AICS or otherwise complies with NICNAS.**MITI (Japanese Handbook of Existing and New Chemical Substances):** This product is listed in the Handbook or has been approved in Japan by new substance notification.**ECL (Korean Toxic Substances Control Act):** This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.KE-24875**Inventory of Existing Chemical Substances in China:** All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).**SECTION 16: Other information****HMIS® Hazard Ratings:** Health - 3, Flammability - 2, Chemical Reactivity - 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

Revision Information: Not relevant.**Key literature references and sources for data:** No data available.**Training information:** No data available.**Issue date:** 10/20/2014**SDS No.:****Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.