

according to Regulation (EC) No. 1907/2006 as amended by (EC) No. 2015/830 and US OSHA HCS 2015

Section 1. Identification of the Substance/Mixture and of the Company/Undertaking

- 1.1 Product Code:** 28680
Product Name: Short-chain Fatty Acid Mixture 2
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant identified uses: For research use only, not for human or veterinary use.
- 1.3 Details of the Supplier of the Safety Data Sheet:**
Company Name: Cayman Chemical Company
 1180 E. Ellsworth Rd.
 Ann Arbor, MI 48108
Web site address: www.caymanchem.com
Information: Cayman Chemical Company +1 (734)971-3335
- 1.4 Emergency telephone number:**
Emergency Contact: CHEMTREC Within USA and Canada: +1 (800)424-9300
 CHEMTREC Outside USA and Canada: +1 (703)527-3887

Section 2. Hazards Identification

- 2.1 Classification of the Substance or Mixture:**
Skin Corrosion/Irritation, Category 3
- 2.2 Label Elements:**
- GHS Signal Word:** **Warning**
- GHS Hazard Phrases:**
 H316: Causes mild skin irritation.
- GHS Precautionary Phrases:**
 No phrases apply.
- GHS Response Phrases:**
 P332+313: If skin irritation occurs, get medical advice/attention.
- GHS Storage and Disposal Phrases:**
 Please refer to Section 7 for Storage and Section 13 for Disposal information.
- 2.3 Adverse Human Health** Causes mild skin irritation.
Effects and Symptoms: Material may be irritating to the mucous membranes and upper respiratory tract.
 May be harmful by inhalation, ingestion, or skin absorption.
 May cause eye or respiratory system irritation.
 To the best of our knowledge, the toxicological properties have not been thoroughly investigated.

Section 3. Composition/Information on Ingredients

CAS # / RTECS #	Hazardous Components (Chemical Name)/ REACH Registration No.	Concentration	EC No./ EC Index No.	GHS Classification
64-19-7 AF1225000	Acetic acid 01-2119475328-30-0000	0.1 %	200-580-7 607-002-00-6	Flam. Liq. 3: H226 Skin Corr. 1A: H314
79-09-4 UE5950000	Propionic acid 01-2119486971-24	0.1 %	201-176-3 607-089-00-0	Skin Corr. 1B: H314
79-31-2 NQ4375000	iso-Butyric acid 01-2119488973-18	0.1 %	201-195-7 607-063-00-9	Acute Tox.(O) 4: H302 Acute Tox.(D) 4: H312

107-92-6 ES5425000	Butyric acid 01-2119488986-11	0.1 %	203-532-3 607-135-00-X	Skin Corr. 1B: H314
116-53-0 EK7897000	Butanoic acid, 2-methyl- 01-2119959862-23	0.1 %	204-145-2 NA	Acute Tox.(O) 4: H302 Acute Tox.(D) 4: H312 Skin Corr. 1B: H314 Eye Damage 1: H318
503-74-2 NY1400000	Isopentanoic acid	0.1 %	207-975-3 NA	Skin Corr. 1C: H314 Eye Damage 1: H318
109-52-4 YV6100000	Pentanoic acid 01-2119448010-56	0.1 %	203-677-2 607-143-00-3	Skin Corr. 1B: H314 Aquatic (C) 3: H412
7732-18-5 ZC0110000	Water na	99.3 %	231-791-2 NA	No GHS classifications apply.

Section 4. First Aid Measures

4.1 Description of First Aid
Measures:

In Case of Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Get immediate medical attention.

In Case of Skin Contact: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

In Case of Eye Contact: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes. Have eyes examined and tested by medical personnel.

In Case of Ingestion: Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention. Do NOT induce vomiting unless directed to do so by medical personnel.

Section 5. Fire Fighting Measures

5.1 Suitable Extinguishing Use alcohol-resistant foam, carbon dioxide, water, or dry chemical spray.

Media: Use water spray to cool fire-exposed containers.

Unsuitable Extinguishing A solid water stream may be inefficient.

Media:

5.2 Flammable Properties and No data available.

Hazards:

No data available.

Flash Pt: No data.

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

5.3 Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent), and full protective gear to prevent contact with skin and eyes.

Section 6. Accidental Release Measures

- 6.1 Protective Precautions,** Avoid raising and breathing dust, and provide adequate ventilation.
Protective Equipment and As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator,
Emergency Procedures: and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).
- 6.2 Environmental** Take steps to avoid release into the environment, if safe to do so.
Precautions:
- 6.3 Methods and Material For** Contain spill and collect, as appropriate.
Containment and Cleaning Transfer to a chemical waste container for disposal in accordance with local regulations.
Up:

Section 7. Handling and Storage

- 7.1 Precautions To Be Taken** Avoid breathing dust/fume/gas/mist/vapours/spray.
in Handling: Avoid prolonged or repeated exposure.
- 7.2 Precautions To Be Taken** Keep container tightly closed.
in Storing: Store in accordance with information listed on the product insert.

Section 8. Exposure Controls/Personal Protection

8.1 Exposure Parameters:

CAS #	Chemical Name	Jurisdiction	Recommended Exposure Limits	Notations
64-19-7	Acetic acid	ACGIH TLV	TLV: 10 ppm STEL: 15 ppm	
		Europe	TWA: 25 mg/m3 (10 ppm)	
		France VL	STEL: 25 mg/m3 (10 ppm)	
		OSHA PELs	PEL: 10 ppm	
79-09-4	Propionic acid	ACGIH TLV	TLV: 10 ppm	
		Europe	TWA: 31 mg/m3 (10 ppm) STEL: 62 mg/m3 (20 ppm)	
		France VL	TWA: 31 mg/m3 (10 ppm) STEL: 62 mg/m3 (20 ppm)	
		Britain EH40	TWA: 31 mg/m3 (10 ppm) STEL: 46 mg/m3 (15 ppm)	

8.2 Exposure Controls:

- 8.2.1 Engineering Controls** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne
(Ventilation etc.): levels below recommended exposure limits.
- 8.2.2 Personal protection equipment:**
- Eye Protection:** Safety glasses
- Protective Gloves:** Compatible chemical-resistant gloves
- Other Protective Clothing:** Lab coat
- Respiratory Equipment** NIOSH approved respirator, as conditions warrant.
(Specify Type):
- Work/Hygienic/Maintenance Practices:** Do not take internally.
 Facilities storing or utilizing this material should be equipped with an eyewash and a safety shower.
 Wash thoroughly after handling.
 No data available.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Physical States:	[] Gas	[X] Liquid	[] Solid
Appearance and Odor:	A solution in water		
pH:	No data.		
Melting Point:	No data.		
Boiling Point:	No data.		
Flash Pt:	No data.		
Evaporation Rate:	No data.		
Flammability (solid, gas):	No data available.		
Explosive Limits:	LEL: No data.	UEL: No data.	
Vapor Pressure (vs. Air or mm Hg):	No data.		
Vapor Density (vs. Air = 1):	No data.		
Specific Gravity (Water = 1):	No data.		
Solubility in Water:	No data.		
Octanol/Water Partition Coefficient:	No data.		
Autoignition Pt:	No data.		
Decomposition Temperature:	No data.		
Viscosity:	No data.		

9.2 Other Information

Percent Volatile:	No data.
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Section 10. Stability and Reactivity

10.1 Reactivity:	No data available.
10.2 Stability:	Unstable [] Stable [X]
10.3 Stability Note(s):	Stable if stored in accordance with information listed on the product insert.
Polymerization:	Will occur [] Will not occur [X]
10.4 Conditions To Avoid:	No data available.
10.5 Incompatibility - Materials To Avoid:	No data available.
10.6 Hazardous Decomposition or Byproducts:	No data available.

Section 11. Toxicological Information

11.1 Information on Toxicological Effects: The toxicological effects of this product have not been thoroughly studied.

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
64-19-7	Acetic acid	n.a.	n.a.	n.a.	n.a.
79-09-4	Propionic acid	n.a.	n.a.	n.a.	n.a.
79-31-2	iso-Butyric acid	n.a.	n.a.	n.a.	n.a.
107-92-6	Butyric acid	n.a.	n.a.	n.a.	n.a.
116-53-0	Butanoic acid, 2-methyl-	n.a.	n.a.	n.a.	n.a.
503-74-2	Isopentanoic acid	n.a.	n.a.	n.a.	n.a.
109-52-4	Pentanoic acid	n.a.	n.a.	n.a.	n.a.
7732-18-5	Water	n.a.	n.a.	n.a.	n.a.

Section 12. Ecological Information

12.1 Toxicity: Avoid release into the environment.
Runoff from fire control or dilution water may cause pollution.

12.2 Persistence and Degradability: No data available.

12.3 Bioaccumulative Potential: No data available.

12.4 Mobility in Soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: No data available.

Section 13. Disposal Considerations

13.1 Waste Disposal Method: Dispose in accordance with local, state, and federal regulations.

Section 14. Transport Information

14.1 LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not dangerous goods.

DOT Hazard Class:

UN/NA Number:

14.1 LAND TRANSPORT (European ADR/RID):

ADR/RID Shipping Name: Not dangerous goods.

UN Number:

Hazard Class:

14.3 AIR TRANSPORT (ICAO/IATA):

ICAO/IATA Shipping Name: Not dangerous goods.

UN Number:

Packing Group:

Hazard Class:

Additional Transport Information: Transport in accordance with local, state, and federal regulations.

Section 15. Regulatory Information

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
64-19-7	Acetic acid	No	Yes 5000 LB	No
79-09-4	Propionic acid	No	Yes 5000 LB	No
79-31-2	iso-Butyric acid	No	Yes 5000 LB	No
107-92-6	Butyric acid	No	Yes 5000 LB	No
116-53-0	Butanoic acid, 2-methyl-	No	No	No
503-74-2	Isopentanoic acid	No	No	No
109-52-4	Pentanoic acid	No	No	No
7732-18-5	Water	No	No	No

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
64-19-7	Acetic acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
79-09-4	Propionic acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
79-31-2	iso-Butyric acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
107-92-6	Butyric acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
116-53-0	Butanoic acid, 2-methyl-	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
503-74-2	Isopentanoic acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
109-52-4	Pentanoic acid	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No
7732-18-5	Water	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory; CA PROP.65: No

Regulatory Information Statement: This SDS was prepared in accordance with 29 CFR 1910.1200 and Regulation (EC) No.1272/2008.

Section 16. Other Information

Revision Date: 12/14/2019

Additional Information About This Product: No data available.

This Product:

Company Policy or Disclaimer: DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.