SAFETY DATA SHEET

Preparation Date: 11/01/2019 **Revision date** 11/01/2019 **Revision Number:** G1

1. IDENTIFICATION

Product identifier

Product code: CR131
Product Name: CROTONIC ACID, REAGENT

Other means of identification
Synonyms: Acrylic acid, 3-methyl-
alpha-Butenoic acid
2-Butenoic acid (9CI)
Kyselina krotonova (Czech)
beta-Methylacrylic acid
3-Methylacrylic acid
alpha-Crotonic acid

CAS #: 3724-65-0
RTECS # GQ2800000
CI#: Not available

Recommended use of the chemical and restrictions on use
Recommended use: No information available.
Uses advised against No information available

Supplier:
Spectrum Chemical Mfg. Corp
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements
Harmful if swallowed
Toxic in contact with skin
Causes severe skin burns and eye damage
May be corrosive to metals

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust
Keep only in original container

Precautionary Statements - Response
Immediately call a POISON CENTER or physician
Absorb spillage to prevent material damage
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or physician.
Call a POISON CENTER or physician if you feel unwell
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.
IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal
Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%

Crotonic Acid	3724-65-0	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First aider needs to protect himself.

Skin Contact: Toxic in contact with skin. Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. WARNING! It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms

Severe skin and eye irritation or burns
May cause gastrointestinal (digestive) tract burns
Coughing and wheezing
May cause bronchitis
Headache
Nausea
Vomiting
May cause shortness of breath

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders
First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Dry chemical. Carbon dioxide (CO2). Water spray mist, or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO2).

Specific hazards May be combustible at high temperatures.

Special Protective Actions for Firefighters

Specific Methods: No information available

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents
Reducing agents
Bases

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
Crotonic Acid	3724-65-0	None	None	None	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Crotonic Acid	3724-65-0	None	None	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
Crotonic Acid	3724-65-0	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Long sleeved clothing
Gloves
Chemical resistant apron

Respiratory protection: Effective dust mask. Wear respirator with dust filter. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Crystalline.

Color:
White.

Odor:
No information available.

Taste
No information available.

Formula
C4H6O2

Molecular/Formula weight (g/mole):
86.09

Flammability (solid, gas)
no data available

Flashpoint (°C/°F):
88°C/190.4°F

Flash Point Tested according to:
Open cup

Autoignition Temperature (°C/°F):
396°C/744.8°F

Lower Explosion Limit (%):
2.2

Upper Explosion Limit (%):
15.1

Melting point/range(°C/°F):
70-72°C/158-162°F

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
180-185°C/356-365°F

Bulk density:
No information available

Density (g/cm3):
No information available

Specific gravity:
0.9604-1.03

pH
No information available

Vapor pressure @ 20°C (kPa):
0

Evaporation rate:
No information available

Vapor density:
2.97

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Easily soluble in hot water
Soluble in cold water
Soluble in diethyl ether
Soluble in Acetone
Soluble in Toluene

10. STABILITY AND REACTIVITY

Reactivity
No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Oxidizing agents
Reducing agents
Bases

Hazardous decomposition products: Carbon oxides.

Other Information
Corrosivity: May be corrosive to metals

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Ingestion.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document

Component Information

Crotonic Acid	
CAS No	3724-65-0

LD50/oral/rat = 1 g/kg Oral LD50 Rat
LD50/oral/mouse = 4800 mg/kg Oral LD50 Rat
LD50/dermal/rabbit = 600 mg/kg Dermal LD50 Rabbit
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = 200 mg/kg Dermal LD50 Guinea Pig

Product Information

LD50/oral/rat =
Value - Acute Toxicity = 1000 mg/kg

LD50/oral/mouse =
Value - Acute Tox = 4800 mg/kg

LD50/dermal/rabbit
Value - Acute Toxicity = 600 mg/kg

LD50/dermal/rat
VALUE - Acute Tox = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Causes severe irritation and burns.

Eye Contact: Causes serious eye damage.

Inhalation May cause irritation of respiratory tract. Causes nose and throat irritation with coughing and wheezing.

Ingestion May cause digestive (gastrointestinal) tract burns. May cause headache. Ingestion may cause nausea, vomiting.

Aspiration hazard No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Prolonged or repeated inhalation can irritate the lungs. Prolonged or repeated inhalation may cause bronchitis with coughing, phlegm, and/or shortness of breath.

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Crotonic Acid	3724-65-0	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: No data available.

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil No information available
Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series	RCRA - K Series	RCRA - P Series	RCRA - U Series

		Wastes	Wastes	Wastes	Wastes
Crotonic Acid	3724-65-0	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No:	UN2823
Proper Shipping Name:	Crotonic acid, solid
Hazard Class	8
Subsidiary Class	No information available
Packing group:	III
Emergency Response Guide Number	153
Marine Pollutant	No data available
DOT RQ (lbs):	No information available
Special Provisions	IB8, IP3, T1, TP33
Symbol(s):	No information available
Description:	UN2823, Crotonic acid, solid, 8, III

TDG (Canada)

UN-No:	UN2823
Proper Shipping Name:	Crotonic acid, solid
Hazard Class	8
Subsidiary Risk:	No information available
Packing Group:	III
Marine Pollutant	No Information available
Description:	UN2823, Crotonic acid, solid, 8, III

ADR

UN Number	UN2823
Proper Shipping Name:	Crotonic acid, solid
Transport hazard class(es)	8
Packing group	III
Subsidiary Risk:	No information available
Description:	UN2823, Crotonic acid, solid, 8, III

IMDG

UN-No:	UN2823
Proper Shipping Name:	Crotonic acid, solid
Hazard Class:	8
Subsidiary Risk:	No information available
Packing Group:	III
Marine Pollutant	No information available
EMS:	F-A
Description	UN2823, Crotonic acid, solid, 8, III

RID

UN Number	UN2823
Proper Shipping Name:	Crotonic acid, solid
Transport hazard class(es)	8
Subsidiary Risk:	No information available
Packing group	III
Description:	UN2823, Crotonic acid, solid, 8, III

ICAO (air)

UN-No:	UN2823
Proper Shipping Name:	Crotonic acid, solid

Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN2823, Crotonic acid, solid, 8, III

IATA

UN Number UN2823
Proper Shipping Name: Crotonic acid, solid
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Precautionary Statements - Response 8L
Special Provisions No information available
Description: UN2823, Crotonic acid, solid, 8, III

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
Crotonic Acid	3724-65-0	PresentACTIVE	Present KE-04090	Present	Present (2)-963	Present	Present	Present 223-077-4

U.S. Regulations

Crotonic Acid

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: 0539
Pennsylvania RTK: Present

FDA - 21 CFR - Total Food Additives 175.105, 175.350, 176.170, 176.180 (listed under (E)-2-Butenoic acid)
- List Sourced from EAFUS

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Crotonic Acid	3724-65-0	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Crotonic Acid	3724-65-0	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules	TSCA 8(d) -Health and Safety Reporting

		(SNURS)	
Crotonic Acid	3724-65-0	Not Applicable	Not Applicable

Canada

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has not been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
Crotonic Acid	3724-65-0	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
Crotonic Acid	3724-65-0	Not listed
Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Crotonic Acid	3724-65-0	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
Crotonic Acid	3724-65-0	

EU - CLP (1272/2008)

R-phrase(s)
R22 - Harmful if swallowed
R24 - Toxic in contact with skin
R35 - Causes severe burns
R41 - Risk of serious damage to eyes

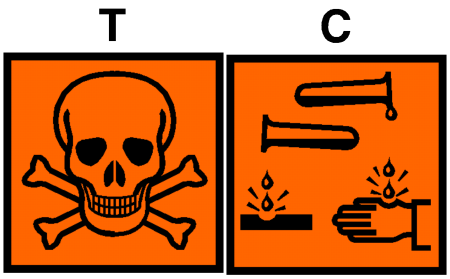
S -phrase(s)
S 7 - Keep container tightly closed.
S 9 - Keep container in a well-ventilated place.
S36 - Wear suitable protective clothing
S39 - Wear eye/face protection
S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

Component	CAS No	**Classification**	**Concentration Limits:**	**Safety Phrases**
Crotonic Acid	3724-65-0		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
T - Toxic
C - Corrosive

Xn - Harmful



16. OTHER INFORMATION

Preparation Date: 11/01/2019
Revision date 11/01/2019
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet