



# CITRIC ACID (2,2,4,4-D4, 98%)

## Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 07/02/2011  
DLM-3487

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Supersedes: 21/09/2011

Version: 3.1

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

### 1.1. Product identifier

Product form : Substance  
Substance name : CITRIC ACID (2,2,4,4-D4, 98%)  
EC No : 201-069-1 (Unlabeled)  
CAS No : 147664-83-3  
Product code : DLM-3487  
Formula :  $\text{HOC}(\text{COOH})(\text{CD}_2\text{COOH})_2$

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

#### 1.2.1. Relevant identified uses

Main use category : Professional use  
Industrial/Professional use spec : For professional use only

#### 1.2.2. Uses advised against

No additional information available

### 1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.  
50 Frontage Road  
Andover, MA 01810  
USA

USA: 1-800-322-1174 Int: 1-978-749-8000  
[cilsales@isotope.com](mailto:cilsales@isotope.com) [www.isotope.com](http://www.isotope.com)

### Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)  
International: 1-703-741-5970 (24 hours)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319

Full text of hazard classes and H-statements : see section 16

#### Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Xi; R36

Full text of R-phrases: see section 16

#### GHS-US classification

Eye Irrit. 2A H319

Full text of H statements : see section 16

#### Adverse physicochemical, human health and environmental effects

No additional information available

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS07

Signal word (CLP) : Warning

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according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Hazard statements (CLP)	: H319 - Causes serious eye irritation
Precautionary statements (CLP)	: P264 - Wash hands, forearms and face thoroughly after handling P280 - Wear protective clothing, protective gloves 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

### GHS-US labelling

Hazard pictograms (GHS-US)



GHS07

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H319 - Causes serious eye irritation

Precautionary statements (GHS-US)	: P264 - Wash hands, forearms and face thoroughly after handling P280 - Wear protective clothing, protective gloves 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
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### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
CITRIC ACID (2,2,4,4-D4, 98%)	(CAS No) 147664-83-3 (EC No) 201-069-1 (Unlabeled)	100	Xi; R36
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
CITRIC ACID (2,2,4,4-D4, 98%)	(CAS No) 147664-83-3 (EC No) 201-069-1 (Unlabeled)	100	Eye Irrit. 2, H319

Full text of R- and H-statements: see section 16

Name	Product identifier	%	GHS-US classification
CITRIC ACID (2,2,4,4-D4, 98%) (Main constituent)	(CAS No) 147664-83-3	100	Eye Irrit. 2A, H319

Full text of H-statements: see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

# CITRIC ACID (2,2,4,4-D4, 98%) DLM-3487

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### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>).

### 5.2. Special hazards arising from the substance or mixture

No additional information available

### 5.3. Advice for firefighters

Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Avoid contact with eyes. Avoid breathing vapours, mist, gas. Use personal protective equipment as required. Avoid dust formation. Ensure adequate air ventilation.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Take up mechanically (sweeping, shovelling) and collect in suitable container for disposal. This material and its container must be disposed of in a safe way, and as per local legislation.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with eyes. Do not breathe dust, Aerosols. Provide adequate ventilation to minimize dust and/or vapour concentrations. Eliminate all ignition sources if safe to do so. Take precautionary measures against static discharge.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Store in a well-ventilated place. Keep container tightly closed.

Storage conditions : Store at room temperature away from light and moisture.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

No additional information available

### 8.2. Exposure controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety procedures.

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Materials for protective clothing : Wear suitable protective clothing and gloves.

Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.

Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection.

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Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline.
Molecular mass	: 196.15 g/mol (Labeled)
Colour	: White to off-white.
Odour	: No data available
Odour threshold	: No data available
pH	: 1.8 at ca.50 g/l at °C (77 °F)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 153 - 159 °C (307 - 318 °F) - lit.
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Water: 383 g/l at 25°C (77 °F)
Log Pow	: -1.639 at 20 °C (68 °F)
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: ≥ 8 % (V)

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable if stored under recommended conditions.

#### 10.3. Possibility of hazardous reactions

No additional information available

#### 10.4. Conditions to avoid

Not available.

#### 10.5. Incompatible materials

Oxidizing agents, Bases, Reducing agents, Nitrates.

#### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>).

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
LD50 oral rat	5400 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE CLP (oral)	3000.000 mg/kg bodyweight

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Skin corrosion/irritation	: Not classified Skin rabbit mild skin irritation pH: 1.8 at ca.50 g/l at °C (77 °F)
Serious eye damage/irritation	: Causes serious eye irritation. Eyes rabbit Irritating to eyes (OECD 405 method) pH: 1.8 at ca.50 g/l at °C (77 °F)
Respiratory or skin sensitisation	: Prolonged or repeated exposure may cause allergic reactions to certain sensitive individuals. No data available
Germ cell mutagenicity	: Not available
Carcinogenicity	: Not classified
Reproductive toxicity	: Not available
STOT-single exposure	: Not classified No data available
STOT-repeated exposure	: Not classified No data available
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Vomiting. Diarrhea. Dermatitis. Damage to tooth enamel. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
LC50 fish 1	440 mg/l <i>Leuciscus idus melanotus</i> - 48 h - mortality
EC50 <i>Daphnia</i> 1	1535 mg/l <i>Daphnia magna</i> (Water flea) - 24 h - static test

### 12.2. Persistence and degradability

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
Persistence and degradability	Not available.

### 12.3. Bioaccumulative potential

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
Log Pow	-1.639 at 20 °C (68 °F)
Bioaccumulative potential	Not available.

### 12.4. Mobility in soil

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
Ecology - soil	Not available.

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects : Not available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.

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Product/Packaging disposal recommendations: : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.  
Ecology - waste materials : Dispose of as unused product.

### SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

#### 14.1. UN number

Not applicable

#### 14.2. UN proper shipping name

Not applicable

#### 14.3. Additional information

Other information : No supplementary information available.  
Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

#### Overland transport

No additional information available

#### Transport by sea

No additional information available

#### Air transport

No additional information available

#### 14.4. Environmental hazards

Other information : No supplementary information available.

#### 14.5. Special precautions for user

Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

#### 14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
SARA Section 302 Threshold Planning Quantity (TPQ)	Not subject to reporting requirements of the United States SARA Section 302.
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313.

#### 15.2. International regulations

##### CANADA

CITRIC ACID (2,2,4,4-D4, 98%) (147664-83-3)	
Listed on the Canadian DSL (Domestic Substances List)	

##### 15.2.1. National regulations

No additional information available

#### 15.3. US State regulations

CITRIC ACID (2,2,4,4-D4, 98%)(147664-83-3)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

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### SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

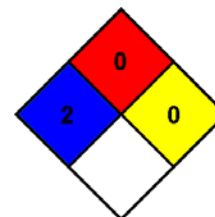
Full text of R-, H- and EUH-statements:

Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation
R36	Irritating to eyes
Xi	Irritant

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



### HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*