



your partner in food safety

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Version 1

## 1. IDENTIFICATION

### Product identifier

**Product Name** 4-D Denaturant

### Other means of identification

**SDS #** BIR-056

**Product Code** I00238

### Recommended use of the chemical and restrictions on use

**Recommended Use** For marking condemned meat and poultry.

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

#### **Supplier Address**

Birko Corporation  
9152 Yosemite Street  
Henderson, CO 80640-8027  
[www.birkocorp.com](http://www.birkocorp.com)

### Emergency telephone number

**Company Phone Number** Phone: 303-289-1090 or 1-800-525-0476

Fax: 303-289-1190

**Emergency Telephone** Chemtrec 1-800-424-9300

## 2. HAZARDS IDENTIFICATION

**Appearance** Dark green liquid

**Physical state** Liquid

**Odor** Odorless

### Classification

This chemical does not meet the hazardous criteria set forth by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200). However, this Safety Data Sheet (SDS) contains valuable information critical to the safe handling and proper use of this product. This SDS should be retained and available for employees and other users of this product.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	Weight-%
Citric Acid	77-92-9	<1

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret. \*\*

## 4. FIRST AID MEASURES

### Description of first aid measures

#### **Eye Contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin Contact** Wash off immediately with plenty of water for at least 15 minutes.

**Inhalation** Remove to fresh air.

**Ingestion** Clean mouth with water and drink afterwards plenty of water.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** See Section 11: Toxicological Information of this SDS for more detailed symptoms.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically.

## **5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media**

Water spray (fog). Carbon dioxide (CO<sub>2</sub>). Dry chemical. Foam blanket.

**Unsuitable Extinguishing Media** Not determined.

**Specific Hazards Arising from the Chemical**

Not determined.

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

**Protective equipment and precautions 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** Use personal protective equipment as required.

**Environmental precautions**

**Environmental precautions** See Section 12 for additional Ecological Information.

**Methods and material for containment and cleaning up**

**Methods for Containment** Prevent further leakage or spillage if safe to do so.

**Methods for Clean-Up** Keep in suitable, closed containers for disposal.

## **7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on Safe Handling** Handle in accordance with good industrial hygiene and safety practice.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place.

**Incompatible Materials** Acids. Oxidizers. Strong alkalis.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Citric Acid 77-92-9	-	15 mg / m <sup>3</sup> (Total)	-

### Appropriate engineering controls

**Engineering Controls** Apply technical measures to comply with the occupational exposure limits.

### Individual protection measures, such as personal protective equipment

**Eye/Face Protection** Wear eye/face protection. Refer to 29 CFR 1910.133 for eye and face protection regulations.

**Skin and Body Protection** Wear protective gloves and protective clothing. Refer to 29 CFR 1910.138 for appropriate skin and body protection.

**Respiratory Protection** Refer to 29 CFR 1910.134 for respiratory protection requirements.

**General Hygiene Considerations** Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Odor</b> <b>Odor Threshold</b>	Odorless Not determined	
<b>Appearance</b>	Dark green liquid			
<b>Color</b>	Not determined			
<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>		
pH	Not determined			
Melting point / freezing point	Not determined			
Boiling point / boiling range	Not determined			
Flash point	Not determined			
Evaporation Rate	<1			
Flammability (Solid, Gas)	Liquid - not applicable			
Flammability Limit in Air				
Upper flammability or explosive limits	Not determined			
Lower flammability or explosive limits	Not determined			
Vapor Pressure	Not determined			
Vapor Density	>1			
Relative Density	1.00			
Water Solubility	100%			
Solubility in other solvents	Not determined			
Partition Coefficient	Not determined			
Autoignition temperature	Not determined			
Decomposition temperature	Not determined			
Kinematic viscosity	Not determined			
Dynamic Viscosity	Not determined			
Explosive Properties	Not determined			
Oxidizing Properties	Not determined			

## 10. STABILITY AND REACTIVITY

**Reactivity**

Not reactive under normal conditions.

**Chemical stability**

Stable under recommended storage conditions.

**Possibility of hazardous reactions**

None under normal processing.

**Hazardous Polymerization** Hazardous polymerization does not occur.

**Conditions to Avoid**

Keep out of reach of children.

**Incompatible materials**

Acids. Oxidizers. Strong alkalis.

**Hazardous decomposition products**

Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

## 11. TOXICOLOGICAL INFORMATION

**Information on likely routes of exposure****Product Information**

**Eye Contact** Avoid contact with eyes.

**Skin Contact** Avoid contact with skin.

**Inhalation** Do not inhale.

**Ingestion** Do not ingest.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
1,2 Propanediol 57-55-6	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-
Cellulose Gum 9004-32-4	= 27000 mg/kg (Rat)	> 2 g/kg (Rabbit)	> 5800 mg/m <sup>3</sup> (Rat) 4 h
Tetrasodium EDTA 64-02-8	= 1658 mg/kg (Rat) = 10 g/kg (Rat)	-	-
FD&C Blue No.1 3844-45-9	> 2 g/kg (Rat)	-	-
Citric Acid 77-92-9	= 3 g/kg (Rat) = 3000 mg/kg (Rat)	-	-

**Symptoms related to the physical, chemical and toxicological characteristics**

**Symptoms** none known.

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

Group 3 IARC components are "not classifiable as human carcinogens".

Chemical name	ACGIH	IARC	NTP	OSHA
FD&C Blue No.1 3844-45-9		Group 3		

**Legend**

*IARC (International Agency for Research on Cancer)  
Group 3 IARC components are "not classifiable as human carcinogens"*

**Numerical measures of toxicity**

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

Oral LD50	2,000,000.00 mg/kg
Dermal LD50	2,080,000.00 mg/kg

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Component Information**

Chemical name	Algae/aquatic plants	Fish	Crustacea
1,2 Propanediol 57-55-6	19000: 96 h Pseudokirchneriella subcapitata mg/L EC50	51600: 96 h Oncorhynchus mykiss mg/L LC50 static 41 - 47: 96 h Oncorhynchus mykiss mL/L LC50 static 51400: 96 h Pimephales promelas mg/L LC50 static 710: 96 h Pimephales promelas mg/L LC50	1000: 48 h Daphnia magna mg/L EC50 Static 10000: 24 h Daphnia magna mg/L EC50
Tetrasodium EDTA 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	41: 96 h Lepomis macrochirus mg/L LC50 static 59.8: 96 h Pimephales promelas mg/L LC50 static	610: 24 h Daphnia magna mg/L EC50
Citric Acid 77-92-9		1516: 96 h Lepomis macrochirus mg/L LC50 static	120: 72 h Daphnia magna mg/L EC50

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

There is no data for this product.

**Mobility**

Chemical name	Partition coefficient
Citric Acid 77-92-9	-1.72

**Other Adverse Effects**

Not determined

**13. DISPOSAL CONSIDERATIONS****Waste Treatment Methods****Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated Packaging**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

## 14. TRANSPORT INFORMATION

<b>Note</b>	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
<b>DOT</b>	Not regulated
<b>IATA</b>	Not regulated
<b>IMDG</b>	Not regulated

## 15. REGULATORY INFORMATION

### International Inventories

Chemical name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
1,2 Propanediol	X	X	X	X	X	X	X	X
Cellulose Gum	X	X		X	X	X	X	X
Tetrasodium EDTA	X	X	X	X	X	X	X	X
FD&C Blue No.1	X	X	X	X	X	X	X	X
Sodium Hydroxymethyl Glycinate	X	X	X		X		X	X
Citric Acid	X	X	X	X	X	X	X	X

**Legend:**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**IECSC** - China Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

### US Federal Regulations

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
1,2 Propanediol 57-55-6	X		X

Chemical name	New Jersey	Massachusetts	Pennsylvania
FD&C Blue No.1 3844-45-9		X	

## 16. OTHER INFORMATION

<u>NFPA</u>	<b>Health Hazards</b> 0	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Special Hazards</b> Not determined
<u>HMIS</u>	<b>Health Hazards</b> 0	<b>Flammability</b> 0	<b>Physical hazards</b> 0	<b>Personal Protection</b> B

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**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**