

# Oxalic Acid Solution

Safety Data Sheet

## Section 1: Identification

### 1.1 Identification

Product Name : Oxalic Acid Solution

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

Use of the substance/mixture : Sensitizing Component for Catalytic Resist

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

Nano3D Systems LLC  
1110 NE Circle Blvd., ATAMI/Bldg. 11  
Corvallis, OR 97330

### 1.4 Emergency telephone number

Emergency number Chemtrec : 800-424-9300

## Section 2: Hazard(s) identification

### 2.1 Classification of the substance or mixture

#### Classification (GHS-US)

Flammable liquids (Category 2)	H225
Acute toxicity, Oral (Category 4)	H302
Acute toxicity, Dermal (Category 4)	H312
Serious eye damage (Category 1)	H318
Eye irritation (Category 2A)	H319
Specific target organ toxicity - single exposure (Category 3)	H336

### 2.2 Label elements

#### GHS-US labeling

Hazard pictogram (GHS-US)



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H225 – Highly flammable liquid and vapor  
: H302+H312 – Harmful if swallowed or in contact with skin  
: H318 – Causes serious eye damage.  
: H319 – Causes serious eye irritation  
: H336 – May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements (GHS-US) : P210 – Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
: P233 – Keep container tightly closed.  
: P240 – Ground/bond container and receiving equipment.

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- : P241 – Use explosion-proof electrical/ ventilating/ lighting/ equipment
- : P242 – Use only non-sparking tools.
- : P243 – Take precautionary measures against static discharge.
- : P261 – Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
- : P264 – Wash hands thoroughly after handling
- : P271 – Use only outdoors or in a well-ventilated area.
- : P280 – Wear protective gloves/protective clothing/ eye protection/face protection
- : P301+P312+P330 – If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth.
- : P302+P352+P312 – If on skin: Wash with plenty of soap and water. Call a poison center/doctor if you feel unwell.
- : P304+P340 – If inhaled: Remove person to fresh air and keep comfortable for breathing
- : P305+P351+P338+310 – If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
- : P312 – Call a POISON CENTER/doctor if you feel unwell.
- : Wash contaminated clothing before reuse.
- : P337+P313 – If eye irritation persists: Get medical advice/ attention.
- : P370+P378 – In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
- : P403+P233+P235 – Store in a well-ventilated place. Keep container tightly closed and keep cool.
- : P405 – Store locked up.
- : P501 – Dispose of contents/container to an approved waste disposal plant.

### 2.3 Other Hazards

May form explosive peroxides

### 2.4 Unknown acute toxicity (GHS US)

No additional information available

## Section 3: Composition/information on ingredients

### 3.1 Substance

Not applicable

### 3.2 Mixture

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Name	Product Identifier	%	Classification (GHS-US)
Isopropyl alcohol	(CAS-No.) 67-63-0	Trade Secret	Flam. Liq. 2; Eye Irrit. 2A;STOT SE 3; H225, H319, H336
Oxalic acid	(CAS-No.) 144-62-7	Trade Secret	Acute Tox. 4; Eye Dam. 1; H302 + H312, H318

## Section 4: First Aid Measures

### 4.1 Description of first aid measures

General	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Inhalation	: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Skin contact	: Wash off with soap and plenty of water. Consult a physician.
Eye contact	: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

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

Inhalation	: No information available
Skin contact	: No information available
Eye contact	: No information available
Ingestion	: No information available

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

No further information available

## Section 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry

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chemical or carbon dioxide.

Unsuitable extinguishing media : None

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

Fire hazard : Flammable  
Explosion hazard : Vapors form explosive mixture with air

### 5.3 Advice for firefighters

Protection during firefighting : Wear self-contained breathing apparatus for firefighting if necessary.

## Section 6: Accidental release measures

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

6.1.1 For non-emergency personnel : Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.1.2 For emergency personnel : No additional information available

### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

## Section 7: Handling and storage

### 7.1 Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge.

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

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Storage conditions

: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and store under inert gas. Hygroscopic/moisture sensitive.

## Section 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Isopropyl Alcohol (CAS-No.) 67-63-0

TWA	980.00 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
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#### Oxalic Acid (CAS-No.) 144-62-7

No exposure limit values	1 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
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### 8.2 Exposure controls

Appropriate engineering controls

: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Hand protection

: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

: Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

: Use respirators and components tested and approved under appropriate government

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standards such as NIOSH (US) or CEN (EU).

### Section 9: Physical and chemical properties

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

Physical state	: Liquid
Color	: Colorless
Odor	: alcohol-like
Odor threshold	: No information available
pH	: No information available
Melting point	: -89.5 °C (Isopropanol)
Freezing point	: -89.5 °C (Isopropanol)
Boiling point	: 82 °C (Isopropanol)
Flash point	: 12.0 °C (Isopropanol)
Relative evaporation rate (butyl acetate = 1)	: 3.0
Flammability (solid, gas)	: No information available
Explosion limits	: 2 – 12.7 % (V)
Explosive properties	: No information available
Vapor pressure	: 32.4 mmHg @ 20 °C
Relative density	: No information available
Relative density at 20 °C	: 0.785 g/cm <sup>3</sup>
Water Solubility	: Miscible
Log Pow	: 0.05
Auto-ignition temperature	: 425 °C
Viscosity	: No information available
Viscosity, kinematic	: No information available
Viscosity, dynamic	: No information available

#### 9.2 Other information

No further information available

### Section 10: Stability and reactivity

#### 10.1 Reactivity

No information available

#### 10.2 Chemical Stability

Stable under recommended storage conditions.

Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.

#### 10.3 Possibility of hazardous reactions

Vapors may form explosive mixture with air.

#### 10.4 Conditions to avoid

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Heat, flames and sparks. Extremes of temperature and direct sunlight.

### 10.5 Incompatible materials

Oxidizing agents, Acid anhydrides, Aluminum, Halogenated compounds, Acids, Metals, alkali metals

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products – none

## Section 11: Toxicological information

### 11.1 Control parameters

Acute toxicity : No information available

#### Isopropyl Alcohol (CAS-No.) 67-63-0

LD50 Oral - Rat - 5,045 mg/kg

LC50 Inhalation - Rat - 8 h - 16000 ppm

LD50 Dermal - Rabbit - 12,800 mg/kg

#### Oxalic Acid (CAS-No.) 144-62-7

LD50 Oral - Rat - female - 1,080 mg/kg

LD50 Dermal - Rabbit - 20,000 mg/kg

Skin corrosion/irritation	: Mild skin irritation
Serious eye damage/irritation	: Serious eye damage
Respiratory or skin sensitization	: Does not cause skin sensitization
Germ cell mutagenicity	: No information available
Carcinogenicity	: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC, NTP or OSHA.
Reproductive toxicity	: No information available
Specific target organ toxicity (single exposure)	: Inhalation, Oral - May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	: No information available
Aspiration hazard	: No information available

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### Additional information

Central nervous system depression, prolonged or repeated exposure can cause: Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects., Aspiration may lead to: Lung oedema, Pneumonia

Kidney injury may occur. Contact with eyes can cause: Damage to the eyes.

## Section 12: Ecological information

### 12.1 Toxicity

#### Isopropyl Alcohol (CAS-No.) 67-63-0

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h
Toxicity to algae	EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h EC50 - Algae - > 1,000.00 mg/l - 24 h

#### Oxalic Acid (CAS-No.) 144-62-7

Toxicity to fish	static test LC50 - Leuciscus idus melanotus - 160 mg/l - 48 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 162.2 mg/l - 48 h (OECD Test Guideline 202)

### 12.2 Persistence and degradability

#### Isopropyl Alcohol (CAS-No.) 67-63-0

No information available

#### Oxalic Acid (CAS-No.) 144-62-7

aerobic - Exposure time 20 d  
Result: 89 % - Readily biodegradable

### 12.3 Bioaccumulative potential

#### Isopropyl Alcohol (CAS-No.) 67-63-0

No bioaccumulation is to be expected (log Pow <= 4).



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**Oxalic Acid (CAS-No.) 144-62-7**

No information available

## 12.4 Mobility in soil

**Isopropyl Alcohol (CAS-No.) 67-63-0**

No information available

**Oxalic Acid (CAS-No.) 144-62-7**

No information available

## 12.4 Other adverse effects

No information available

## Section 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

## Section 14: Transportation information

### 14.1 Transportation information

#### Department of Transportation (DOT)

UN number: 1219 Class: 3 Packing group: II

Proper shipping name: Isopropanol

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

## Section 15: Regulatory information

### 15.1 US Federal regulations

**Isopropyl Alcohol (CAS-No.) 67-63-0**

SARA Title III, Sections 302, 311, 312, 313

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## Oxalic Acid (CAS-No.) 144-62-7

SARA Title III, Sections 311, 312, 313

## 15.2 US State regulations

### Isopropyl Alcohol (CAS-No.) 67-63-0

Massachusetts Right To Know

Pennsylvania Right To Know

New Jersey Right To Know

### Oxalic Acid (CAS-No.) 144-62-7

Massachusetts Right To Know

Pennsylvania Right To Know

New Jersey Right To Know

## Section 16: Other information

### HMIS Rating

Health	2
Chronic Health	*
Flammability	3
Physical	0

### NFPA Rating

Health	2
Fire	3
Reactivity	0

**SDS Preparation date:** September 10, 2017    **Supersedes previous version:** New SDS

**This SDS contains revisions in the following sections(s):** Not applicable. New SDS.

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End of Safety Data Sheet

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