



MSC3 Electrolyte

Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

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Version: 2.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : MSC3 Electrolyte

1.2. Recommended use and restrictions on use

Recommended use : Electrolyte solution

1.3. Supplier

Manufacturer

Marking Methods
301 S Raymond Avenue
Alhambra, CA 91803-1531
T (626) 282 8823

1.4. Emergency telephone number

Emergency number : CHEMTREC 1 (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS classification

Ox. Liq. 3
Skin Corr. 1B
Eye Dam. 1
HHNOC 1

2.2. GHS Label elements, including precautionary statements

GHS labelling

Hazard pictograms (GHS)



Signal word (GHS)

: Danger

Hazard statements (GHS)

: May intensify fire; oxidiser.
Causes severe skin burns and eye damage.
Causes severe damage to the respiratory tract

Precautionary statements (GHS)

: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep/Store away from clothing and other combustible materials.
Take any precaution to avoid mixing with combustible materials
Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands, forearms and face thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If inhaled: Remove person to fresh air and keep comfortable for breathing.

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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 doctor.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Ammonium nitrate	CAS-No.: 6484-52-2	10 – 30
Citric acid	CAS-No.: 77-92-9	5 – 10

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact	: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor.
First-aid measures after eye contact	: 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 doctor.
First-aid measures after ingestion	: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: Causes severe damage to the respiratory tract. May cause burns to the respiratory tract.
Symptoms/effects after skin contact	: Causes severe skin burns. Symptoms may include irritation, redness, pain, blisters, serious skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/effects after ingestion	: May be harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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| Suitable extinguishing media | : Use extinguishing media appropriate for surrounding fire. |
| Unsuitable extinguishing media | : Do not use water jet. |

5.2. Specific hazards arising from the chemical

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| Fire hazard | : May intensify fire; oxidiser. Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Metal oxides. May release corrosive or irritating fumes. |
| Explosion hazard | : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries. |

5.3. Special protective equipment and precautions for fire-fighters

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| Firefighting instructions | : Fight fire remotely due to the risk of explosion. Move containers away from the fire area if this can be done without risk. Cool closed containers exposed to fire with water spray. |
| Protection during firefighting | : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA). |

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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| General measures | : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. |
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6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3. Methods and material for containment and cleaning up

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| For containment | : Stop leak if safe to do so. Eliminate all ignition sources if safe to do so. Move containers from spill area. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Do not flush into surface water or sewer system. Wear recommended personal protective equipment. |
| Methods for cleaning up | : Sweep or shovel spills into appropriate container for disposal. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Provide ventilation. |

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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| Additional hazards when processed | : Hazardous waste due to potential risk of explosion. |
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Precautions for safe handling	: Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapours/spray. Do not swallow. When using do not eat, drink or smoke. Take any precaution to avoid mixing with combustible materials. Use only non-sparking tools. Do not spray on an open flame or other ignition source. Eliminate sources of ignition. Proper grounding procedures to avoid static electricity should be followed. Handle and open container with care.
Hygiene measures	: Take off immediately all contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep out of the reach of children. Store locked up. Keep only in the original container. Keep in fireproof place. Store away from direct sunlight or other heat sources. Keep away from clothing and other combustible materials. Keep away from reducing agents. Alkalies. Do not store in unlabelled containers. Containers which are opened should be properly resealed and kept upright to prevent leakage. Store tightly closed in a dry, cool and well-ventilated place.
Incompatible materials	: Heat sources. combustible materials.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

MSC3 Electrolyte
No additional information available
Citric acid (77-92-9)
No additional information available
Ammonium nitrate (6484-52-2)
No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:
Wear suitable gloves resistant to chemical penetration
Eye protection:
Wear eye/face protection
Skin and body protection:
Wear suitable protective clothing
Respiratory protection:
In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Colour	: Clear
Odour	: No data available
Odour threshold	: No data available
pH	: 1.5 – 3
Melting point	: 0 °C (32 °F)
Freezing point	: No data available
Boiling point	: 100 °C (212 °F)
Flash point	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not flammable.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: > 1 [Air = 1]
Relative density	: 1.1
Solubility	: Complete.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: May intensify fire; oxidiser.

9.2. Other information

VOC content	: 0 % (w/w)
Volatility	: 0 % (v/v)

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions. May intensify fire; oxidiser.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Direct sunlight. Sources of ignition. Incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents. Strong reducing agents. Alkalis.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Nitrogen oxides. Metal oxides.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Not classified.

Citric acid (77-92-9)	
LD50 oral rat	3 g/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE CA (oral)	3000 mg/kg bodyweight

Ammonium nitrate (6484-52-2)	
LD50 oral rat	2217 mg/kg
LD50 dermal rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	> 88.8 mg/l/4h
ATE CA (oral)	2217 mg/kg bodyweight

Skin corrosion/irritation : Causes severe skin burns.
pH: 1.5 – 3

Serious eye damage/irritation : Causes serious eye damage.
pH: 1.5 – 3

Respiratory or skin sensitisation : Not classified.

Germ cell mutagenicity : Not classified.

Carcinogenicity : Not classified.

Reproductive toxicity : Not classified.

STOT-single exposure : Not classified.

STOT-repeated exposure : Not classified.

Citric acid (77-92-9)	
LOAEL (oral, rat, 90 days)	8000 mg/kg bodyweight Animal: rat
NOAEL (oral, rat, 90 days)	4000 mg/kg bodyweight Animal: rat

Aspiration hazard : Not classified.

Symptoms/effects after inhalation : Causes severe damage to the respiratory tract. May cause burns to the respiratory tract.

Symptoms/effects after skin contact : Causes severe skin burns. Symptoms may include irritation, redness, pain, blisters, serious skin burns.

Symptoms/effects after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

Citric acid (77-92-9)	
LC50 - Fish [1]	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

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Ammonium nitrate (6484-52-2)

EC50 - Crustacea [1]	490 mg/l Test organisms (species): Daphnia magna
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12.2. Persistence and degradability

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Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	Not established.
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Citric acid (77-92-9)

Partition coefficient n-octanol/water	-1.72 (at 20 °C)
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Ammonium nitrate (6484-52-2)

BCF - Fish [1]	(no bioaccumulation expected)
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Partition coefficient n-octanol/water	-3.1 (at 25 °C)
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. The generation of waste should be avoided or minimized wherever possible.

Additional information : Hazardous waste due to potential risk of explosion. Empty containers may contain residues which are hazardous.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT/TDG) : UN3098

14.2. UN proper shipping name

Proper Shipping Name (DOT/TDG) : Oxidizing liquid, corrosive, n.o.s. (Ammonium nitrate ; Citric acid)

14.3. Transport hazard class(es)

Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

Class (DOT/TDG) : 5.1 (8)

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Hazard labels (DOT/TDG)

:



14.4. Packing group

Packing group (DOT/TDG)

II

14.5. Environmental hazards

Other information

: No supplementary information available.

14.6. Special precautions for user

Special transport precautions

: Do not handle until all safety precautions have been read and understood.

14.7. 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

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Ammonium nitrate(6484-52-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Revision date

: 05/14/2021

Other information

: None.

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