



Electrolyte Formula F10

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 : Electrolyte Formula F10

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

Eye Dam. 1
Resp. Sens. 1
Skin Sens. 1
Muta. 2
Carc. 1B
Repr. 1B
STOT RE 2

2.2. GHS Label elements, including precautionary statements

GHS labelling

Hazard pictograms (GHS)



Signal word (GHS)

: Danger

Hazard statements (GHS)

: May cause an allergic skin reaction.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
Precautionary statements (GHS)
: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapours/spray.

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Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.
If on skin: Wash with plenty of water.
Wash contaminated clothing before reuse.
If skin irritation or rash occurs: Get medical advice/attention.
If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a poison center or doctor.
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.
If exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.
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	%
Nitric acid, cobalt(2+) salt	CAS-No.: 10141-05-6	5 – 10
Ammonium chloride	CAS-No.: 12125-02-9	1 – 5
2-Ethylhexyl sodium sulfate	CAS-No.: 126-92-1	0.5 – 1.5
Methyl salicylate	CAS-No.: 119-36-8	0.1 – 1

*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. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : If skin irritation occurs: Wash skin with plenty of water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.

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 : Do NOT induce vomiting unless directed to do so by medical personnel. 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 : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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Symptoms/effects after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
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 gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic symptoms	: Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.

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).

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

Fire hazard	: Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Halogenated compounds. Metal oxides. May release corrosive or irritating fumes.
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5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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.

6.3. Methods and material for containment and cleaning up

For containment	: Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. 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".

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. 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. Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Anyone with a history of asthma, allergies, chronic or periodic respiratory problems must on no account use these preparations. Avoid exposure during pregnancy. Use only outdoors or in a well-ventilated area. Handle and open container with care.
- Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Store locked up. Keep in original containers. Keep away from : Alkalis. Keep away from food, drink and animal feedingstuffs. 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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available	
Nitric acid, cobalt(2+) salt (10141-05-6)	
No additional information available	
Ammonium chloride (12125-02-9)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	10 mg/m ³ (fume)
ACGIH OEL STEL	20 mg/m ³ (fume)
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL TWA	10 mg/m ³ (fume)
NIOSH REL STEL	20 mg/m ³ (fume)
2-Ethylhexyl sodium sulfate (126-92-1)	
No additional information available	
Methyl salicylate (119-36-8)	
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.

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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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: light red Liquid.
Colour	: light red
Odour	: No data available
Odour threshold	: No data available
pH	: 2.8
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	: 1.08
Solubility	: Miscible with water.
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	: No data available

9.2. Other information

VOC content	: 1.1 % (w/w)
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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.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Incompatible materials.

10.5. Incompatible materials

Strong oxidizing agents. Strong reducing agents. Strong bases. Alkalies.

10.6. Hazardous decomposition products

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

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.

Nitric acid, cobalt(2+) salt (10141-05-6)

LD50 oral rat	434 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE CA (oral)	434 mg/kg bodyweight

Ammonium chloride (12125-02-9)

LD50 oral rat	1650 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 434 (Acute Dermal Toxicity - Fixed Dose Procedure)
ATE CA (oral)	1650 mg/kg bodyweight

2-Ethylhexyl sodium sulfate (126-92-1)

LD50 oral rat	4 g/kg
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE CA (oral)	4000 mg/kg bodyweight

Methyl salicylate (119-36-8)

LD50 oral rat	887 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
ATE CA (oral)	887 mg/kg bodyweight

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Skin corrosion/irritation	: Not classified. pH: 2.8
Serious eye damage/irritation	: Causes serious eye damage. pH: 2.8
Respiratory or skin sensitisation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	: Suspected of causing genetic defects.
Carcinogenicity	: May cause cancer.

Nitric acid, cobalt(2+) salt (10141-05-6)

IARC group	2B - Possibly carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity	: May damage fertility or the unborn child.
STOT-single exposure	: Not classified.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.

Nitric acid, cobalt(2+) salt (10141-05-6)

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
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Ammonium chloride (12125-02-9)

NOAEL (oral, rat, 90 days)	≈ 1695.7 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
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2-Ethylhexyl sodium sulfate (126-92-1)

LOAEL (oral, rat, 90 days)	1016 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	488 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard	: Not classified.
Symptoms/effects after inhalation	: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	: May cause skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
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 gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic symptoms	: Suspected of causing genetic defects. May cause cancer. May damage fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure.
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.
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Ammonium chloride (12125-02-9)

LC50 - Fish [1]	209 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])
EC50 - Crustacea [1]	136.6 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	46.27 mg/l Test organisms (species): Prosopium williamsoni
EC50 - Crustacea [2]	98.5 mg/l Test organisms (species): other: Ceriodaphnia acanthina

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2-Ethylhexyl sodium sulfate (126-92-1)

LC50 - Fish [1]	> 100 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	483 mg/l Test organisms (species): Daphnia magna
LOEC (chronic)	6.86 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	1.4 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	≥ 1.357 mg/l Test organisms (species): Pimephales promelas Duration: '42 d'

Methyl salicylate (119-36-8)

LC50 - Fish [1]	19.8 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	28 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	1370 mg/l Test organisms (species): Pimephales promelas

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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Methyl salicylate (119-36-8)

Partition coefficient n-octanol/water	2.55
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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 : Empty containers may contain residues which are hazardous.

SECTION 14: Transport information

14.1. UN number

DOT NA No : Not applicable
UN-No. (TDG) : Not applicable

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Not applicable

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14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Not applicable

Transportation of Dangerous Goods (TDG)

Transport hazard class(es) (TDG) : Not applicable

14.4. Packing group

Packing group (DOT) : Not applicable

Packing group (TDG) : Not applicable

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.

Ammonium chloride (12125-02-9)

CERCLA RQ	5000 lb
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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
Nitric acid, cobalt(2+) salt(10141-05-6)	U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Massachusetts - Right To Know List
Ammonium chloride(12125-02-9)	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

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Component	State or local regulations
Methyl salicylate(119-36-8)	U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

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

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Other information : None.

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