



# Trident 4-0-1 with UMAXX

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 11/16/2023 Revision date: 4/7/2025 Supersedes: 11/16/2023 Version: 2.0

### SECTION 1 Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : Trident 4-0-1 with UMAXX  
Product code : M77812

#### 1.2. Other means of identification

No additional information available

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

No additional information available

#### 1.4. Supplier's details

JR Simplot Company  
P.O. Box 70013  
Boise, ID, 83707  
T 1-208-336-2110

#### 1.5. Emergency phone number

Emergency number : CHEMTREC 1-800-424-9300

### SECTION 2 Hazard Identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. Label elements

##### GHS US labeling

No labeling applicable

#### 2.3. Hazards associated with known or reasonably anticipated uses

No additional information available

#### 2.4. Hazards not otherwise classified

No additional information available

#### 2.5. Unknown acute toxicity

No additional information available

### SECTION 3 Composition/information on ingredients

#### 3.1. Substances

Not applicable

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### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Proprietary*	CAS-No.: Not Applicable	70 – 97	Not classified
citric acid	CAS-No.: 77-92-9	1 – 10	Skin Irrit. 2, H315 Eye Irrit. 2A, H319
zinc nitrate, hexahydrate	CAS-No.: 10196-18-6	1 – 10	Ox. Sol. 2, H272 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336
iron(II) sulphate, heptahydrate	CAS-No.: 7782-63-0	1 – 10	Skin Irrit. 2, H315 Eye Irrit. 2, H319

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

## SECTION 4 First aid measures

### 4.1. Description of necessary first-aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists. Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.

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

Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects	: Not expected to present a significant hazard under anticipated conditions of normal use.
Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

### 4.3. Indication of immediate medical attention and special treatment needed, if necessary

Other medical advice or treatment	: Treat symptomatically.
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## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Sand. Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

### 5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

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### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment. 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. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6 Accidental release measures

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

General measures	: Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.
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#### For non-emergency personnel

Protective equipment	: Wear recommended personal protective equipment.
Emergency procedures	: Ventilate spillage area. Evacuate unnecessary personnel.

#### For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
Emergency procedures	: Ventilate area. Evacuate unnecessary personnel. Stop leak if safe to do so.
Environmental precautions	: Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.2. Methods and materials for containment and cleaning up

For containment	: Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up	: Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.
Other information	: Dispose of materials or solid residues at an authorized site.

See Heading 8,Exposure controls and personal protection,For further information refer to section 13

## SECTION 7 Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.
Additional hazards when processed	: Not expected to present a significant hazard under anticipated conditions of normal use.

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

Technical measures	: Keep in a cool, well-ventilated place away from heat.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.

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Storage temperature :  $\geq 25$  (5 – 42) °C  
Packaging materials : Store always product in container of same material as original container.

### SECTION 8 Exposure controls/personal protection

#### 8.1. Control parameters

##### iron(II) sulphate, heptahydrate (7782-63-0)

##### USA - ACGIH - Occupational Exposure Limits

ACGIH OEL TWA	1 mg/m <sup>3</sup>
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#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

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

##### Personal protective equipment:

Avoid all unnecessary exposure.

##### Hand protection:

Wear protective gloves.

##### Eye protection:

Chemical goggles or safety glasses. Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

Wear appropriate mask

##### Personal protective equipment symbol(s):



##### Other information:

Do not eat, drink or smoke during use.

### SECTION 9 Physical and chemical properties

#### 9.1. Basic physical and chemical properties

Physical state : Liquid  
Color : Green  
Odor : Characteristic odour  
Odor threshold : No data available  
pH :  $\leq 3$   
Melting point : Not applicable  
Freezing point :  $\leq 0$  °C  
Boiling point :  $\geq 100$  °C  
Flash point : None  
Flammability (solid, gas) : Non flammable.

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Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Density	: $\geq 1.247$ g/ml
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

### citric acid

Particle characteristics	No data available
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### zinc nitrate, hexahydrate

Particle characteristics	No data available
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### iron(II) sulphate, heptahydrate

Particle characteristics	No data available
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### Proprietary\*

Particle characteristics	No data available
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## 9.2. Data relevant with regard to physical hazard classes (supplemental)

VOC content :  $\leq 10$  g/l

## SECTION 10 Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Not established.

### 10.3. Possibility of hazardous reactions

Not established.

### 10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures.

### 10.5. Incompatible materials

Strong acids. Strong bases.

### 10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

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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

<b>citric acid (77-92-9)</b>	
LD50 oral rat	3000 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; 11700 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rat	> 2000 mg/kg body weight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)
ATE US (oral)	3000 mg/kg body weight

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
LD50 oral rat	1190 mg/kg (Rat)
ATE US (oral)	1190 mg/kg body weight

<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
LD50 oral rat	> 2000 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Read-across, Anhydrous form, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 1.1 mg/l (EPA OPP 81-3: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Read-across, Anhydrous form, Inhalation)

Skin corrosion/irritation : Not classified.  
pH: ≤ 3

<b>citric acid (77-92-9)</b>	
pH	2.2 (1 %)

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
pH	5.1 (5 %)

<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
pH	2.1 (1 %, 22 °C)

Serious eye damage/irritation : Not classified.  
pH: ≤ 3

<b>citric acid (77-92-9)</b>	
pH	2.2 (1 %)

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
pH	5.1 (5 %)

<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
pH	2.1 (1 %, 22 °C)

Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

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Reproductive toxicity : Not classified  
STOT-single exposure : Not classified

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
STOT-single exposure	May cause drowsiness or dizziness.

STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified

<b>Trident 4-0-1 with UMAXX</b>	
Viscosity, kinematic	No data available

<b>citric acid (77-92-9)</b>	
Viscosity, kinematic	No data available

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
Viscosity, kinematic	No data available

<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
Viscosity, kinematic	No data available

<b>Proprietary* (Not Applicable)</b>	
Viscosity, kinematic	No data available

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.  
Symptoms/effects : Not expected to present a significant hazard under anticipated conditions of normal use.  
Symptoms/effects after inhalation : None under normal conditions.  
Symptoms/effects after skin contact : None under normal conditions.  
Symptoms/effects after eye contact : None under normal conditions.  
Symptoms/effects after ingestion : None under normal conditions.

## SECTION 12 Ecological information

### 12.1. Ecotoxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.  
Ecology - water : Harmful to aquatic life.  
Hazardous to the aquatic environment, short-term (acute) : Not classified  
Hazardous to the aquatic environment, long-term (chronic) : Not classified

<b>citric acid (77-92-9)</b>	
LC50 - Fish [1]	2600 mg/l (48 h; Leuciscus idus; pH = 7)
EC50 - Crustacea [1]	120 mg/l (72 h; Daphnia magna; pH < 7)
LC50 - Fish [2]	1516 mg/l (96 h; Lepomis macrochirus)
EC50 - Crustacea [2]	85 mg/l (Daphnia magna)
Threshold limit - Algae [1]	80 mg/l (192 h; Microcystis aeruginosa; Reproduction)
Threshold limit - Algae [2]	640 mg/l (168 h; Scenedesmus quadricauda)

<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
LC50 - Fish [1]	2.61 mg/l (96 h; Pimephales promelas; Zinc ion)

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<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
EC50 - Crustacea [1]	0.068 mg/l (48 h; Daphnia magna; Zinc ion)
Threshold limit - Algae [1]	< 0.12 mg/l (Algae; Zinc ion)
<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
LC50 - Fish [1]	925 mg/l (96 h, Poecilia reticulata, Static system, Literature study)
EC50 - Crustacea [1]	152 mg/l (48 h, Daphnia magna, Literature study, Anhydrous form)

### 12.2. Persistence and degradability

<b>Trident 4-0-1 with UMAXX</b>	
Persistence and degradability	Not established.
<b>citric acid (77-92-9)</b>	
Persistence and degradability	Readily biodegradable in water, Biodegradable in the soil, Not established.
Biochemical oxygen demand (BOD)	0.42 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.728 g O <sub>2</sub> /g substance
ThOD	0.686 g O <sub>2</sub> /g substance
BOD (% of ThOD)	(20 day(s)) 0.89
<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
Persistence and degradability	Biodegradability: not applicable, Adsorbs into the soil, Not established.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
Persistence and degradability	Biodegradability in water: no data available, Biodegradability in soil: no data available, Adsorbs into the soil, Not established.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
<b>Proprietary* (Not Applicable)</b>	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

<b>Trident 4-0-1 with UMAXX</b>	
Bioaccumulative potential	Not established.
<b>citric acid (77-92-9)</b>	
Partition coefficient n-octanol/water (Log Pow)	-1.72 (Experimental value)
Bioaccumulative potential	Bioaccumulation: not applicable. Not established.
<b>zinc nitrate, hexahydrate (10196-18-6)</b>	
Bioaccumulative potential	Not established.

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<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
BCF - Fish [1]	≤ 20 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across, Fresh weight)
Bioaccumulative potential	Not bioaccumulative. Not established.

<b>Proprietary* (Not Applicable)</b>	
Bioaccumulative potential	Not established.

### 12.4. Mobility in soil

<b>iron(II) sulphate, heptahydrate (7782-63-0)</b>	
Ecology - soil	Adsorbs into the soil.

### 12.5. Other adverse effects

Ozone	: Not classified
Fluorinated greenhouse gases	: No
Other information	: Avoid unintentional release to the environment.

## SECTION 13 Disposal considerations

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.
Ecological waste information	: Avoid unintentional release to the environment.

## SECTION 14 Transport information

### 14.1. UN number

Not regulated for transport

### 14.2. UN Proper Shipping Name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

### 14.3. Transport hazard class(es)

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

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

**IMDG**  
Transport hazard class(es) (IMDG) : Not applicable

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### IATA

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

### 14.4. Packing group

Packing group (DOT) : Not applicable  
Packing group (TDG) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Transport in bulk

Not applicable

### 14.7. Special precautions for user

#### DOT

No data available

#### TDG

No data available

#### IMDG

No data available

#### IATA

No data available

## SECTION 15 Regulatory information

### 15.1. Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

zinc nitrate, hexahydrate	CAS-No. 10196-18-6	1 – 10%
iron(II) sulphate, heptahydrate	CAS-No. 7782-63-0	1 – 10%
Proprietary*	CAS-No. Not Applicable	70 – 97%

#### iron(II) sulphate, heptahydrate (7782-63-0)

CERCLA RQ 1000 lb

### 15.2. International regulations

#### CANADA

##### citric acid (77-92-9)

Listed on the Canadian DSL (Domestic Substances List)

##### iron(II) sulphate, heptahydrate (7782-63-0)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

#### EU-Regulations

No additional information available

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### National regulations

No additional information available

### 15.3. 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
iron(II) sulphate, heptahydrate(7782-63-0)	U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) List

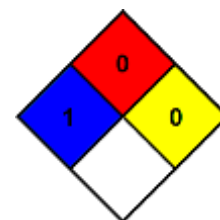
## SECTION 16 Other information

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Revision date : 4/7/2025  
Issue date : 11/16/2023  
Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.  
Other information : None.

Full text of hazard classes and H-statements	
H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H336	May cause drowsiness or dizziness

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.  
NFPA fire hazard : 0 - Materials that will not burn under typical fire 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.  
NFPA specific hazard : None



Hazard Rating  
Health : 1 Slight Hazard - Irritation or minor reversible injury possible  
Flammability : 0 Minimal Hazard - Materials that will not burn  
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.  
Personal protection : C - Safety glasses, Gloves, Synthetic apron

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