


SAFETY DATA SHEET

1. Identification:	
Product Identifier:	Motivate® 2L
Other Means of Identification:	EPA registration number 228-660-82917
Distributed by:	Fine Americas, Inc. 1850 Mt. Diablo Blvd., Suite 405, Walnut Creek, CA 94596, USA Tel: 925-932-8800
Emergency Phone Number:	Chemtrec 1-800-424-9300 (24 hours)
Recommended Use:	Plant growth regulator
Restrictions on Use:	Intended for commercial or agricultural use only. Keep out of reach of children.

2. Hazard(s) Identification (This product is classified as hazardous as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200):	
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Class/Category:	Corrosive to metals, Category 1 Eye damage, Category 1 Skin irritation, Category 2 Acute toxicity oral, Category 4
Route of Exposure:	Most likely exposure routes are dermal and inhalation of spray.
Environmental Hazards:	Hazardous to aquatic environment, acute, Category 1 Hazardous to aquatic environment, chronic, Category 1
Hazards Not Otherwise Classified:	None
Signal word:	DANGER
Symbol(s):	
Hazard Statements:	May be corrosive to metals. Harmful if swallowed. Causes serious eye damage. Causes skin irritation. Very toxic to aquatic life with long lasting effects.
Precautionary Statements:	<p>Keep only in original container. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves and eye protection. Avoid release to the environment.</p> <p>IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. 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 ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice. Take off contaminated clothing and wash before reuse. Absorb spillage to prevent material damage. Collect spillage.</p> <p>Store in corrosive resistant container with a resistant inner liner.</p> <p>Dispose of contents in accordance with local, state, and federal regulations.</p>

3. Composition:		
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This product contains the following components classified as hazardous under 29 CFR 1910.1200		
CAS number:	Component:	Percent:
16672-87-0	Ethephon	21.0-22.4%
The remainder of the mixture is not required to be disclosed by 29 CFR 1910.1200.		

4. First Aid Measures:	
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Inhalation:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
Eyes:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Skin:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Ingestion:	Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Symptoms/Effects:	Acute: No available information Delayed: No available information
Indication of immediate medical attention and special treatment needed, if necessary:	Immediate medical attention is required for eye contact.
5. Fire Fighting Measures:	
Extinguishing Media:	Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog. If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Specific Hazards Arising from the Chemical:	May produce gases such as oxides of carbon and nitrogen.
Protective Equipment and Precautions for Firefighters:	Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
6. Accidental Release Measures:	
Personal Precautions, Protective Equipment and Emergency Procedures:	Refer to Section 8 "Exposure controls/personal protection"
Methods for Containment and Clean-Up:	Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal. Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal. Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following clean-up. See also Section 13. Disposal Considerations.
Other Information:	US Regulations may require reporting of spills of hazardous materials. See Section. 15 Regulatory Information for details on reportable quantities, if any.
7. Handling and Storage:	
Precautions for Safe Handling:	Do not get in eyes or on clothing or skin. Users should wash hands

	before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
Conditions for Safe Storage:	Store in original container and keep tightly closed. Store in a cool, dry place. Do not contaminate water, food, or feed by storage or disposal. See also Section 10. Stability and Reactivity.

8. Exposure Controls/Personal Protection:

Component Exposure Limits:					
Substance	OSHA PEL		Ca/OSHA PEL	NIOSH REL	ACGIH TLV
	ppm	Mg/m3	8-hr TWA (ST) STEL (C) Ceiling	Up to 10 hr TW (ST) STEL (C) Ceiling A	8-hr TWA (ST) STEL (C) Ceiling
No listing					
Appropriate Engineering Controls:	Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.				
Personal Protective Equipment:	<p>Eyes/Face: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.</p> <p>Skin: To avoid contact with skin, wear long pants, waterproof gloves, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.</p> <p>Respiratory: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.</p> <p>General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.</p>				

9. Physical and Chemical Properties:

Appearance:	Clear liquid
Odor:	No data available
Odor Threshold:	No data available
pH:	1.9 – 2.1
Melting Point/Freezing Point:	No data available
Boiling Point:	No data available
Flash Point:	No data available
Evaporation Rate:	No data available
Flammability/Limits:	No data available LFL: No data available UFL: No data available
Vapor Pressure:	No data available
Vapor Density:	No data available
Relative Density:	1.106 g/ml
Solubility (H₂O):	Soluble
Partition Coefficient:	No data available

Auto-Ignition Temperature:	No data available
Decomposition Temperature:	No data available
Viscosity:	1.9848 cSt (@ 20°C) and 1.183 cSt (@ 40°C)

10. Chemical Stability and Reactivity Information:

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to Avoid:	Elevated temperatures and extreme humidity.
Incompatible Materials:	Strong oxidizing agents and alkaline materials. Corrosive to metals such as iron, aluminum, zinc, mild steel and copper.
Hazardous Decomposition Products:	Under fire conditions may produce gases such as hydrogen chloride and oxides of carbon and nitrogen.

11. Toxicological Information:

Likely Routes of Exposure:	Dermal and inhalation of spray.
Symptoms:	Inhalation: Low inhalation toxicity based on toxicity studies. Eye: Severely irritating with possible damage based on toxicity studies. Skin: Minimally toxic and moderately irritating based on toxicity studies. Ingestion: Slightly toxic if ingested based on toxicity studies.
Acute Toxicity:	Oral: Rat LD50: > 500 mg/kg Inhalation: Rat 4-hr LC50: 4.5 mg/L (from technical grade active ingredient) Dermal: Rat LD50: >2,000 mg/kg
Skin Corrosion/Irritation:	Rabbit: Moderately irritating
Serious Eye Damage/Eye Irritation:	Rabbit: Corrosive
Sensitization:	Not a contact sensitizer in guinea pigs following repeated skin exposure. (from technical grade active ingredient)
Germ Cell Mutagenicity:	No available data
Carcinogenicity:	Prolonged overexposure to ethephon may cause cholinesterase inhibition, body weight decreases and organ effects (thyroid, kidney and liver). Ethephon did not cause cancer in laboratory animal studies.
Reproductive/Developmental Toxicity:	Ethephon caused decreased pup body weights at the highest does in a two generation study in rats. No effects were observed on fertility, gestation, mating, organ weights or histopathology..
Specific Target Organ Toxicity:	No available data.

12. Ecological Information:

Ecotoxicity:			
	Species:	Exposure Time	LC50/EC50/IC50
	Fathead Minnow	96 hr	88 mg/L
	Daphnia	48 hr	54 ppm
	Bobwhite Quail		LD50 596 mg/kg
	Mallard Duck		LD50 >5,000 ppm
Persistence and Degradability:	Ethephon is stable to hydrolysis in acidic water, but does rapidly hydrolyze in neutral and alkaline environments with a half-life ranging from a few days to a few weeks. Ethephon is stable to photolysis in water with an estimated half-life of 139 days.		
Bioaccumulation Potential:	No data available		
Mobility in Soil:	Photodegradation on soil does not appear to be a significant route of dissipation. Ethephon degrades fairly rapidly in soil under aerobic and in water under anaerobic conditions with half-life ranging from 7 to 30		

	days. Ethephon is characterized as having moderate to low mobility in soil.
Other Adverse Effects:	None known

13. Disposal Considerations:

Disposal Instructions:	<p>Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.</p> <p>Nonrefillable container. DO NOT reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.</p>
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14. Transport Information:

UN Proper Shipping Name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (ETHEPHON)
Hazard Class:	8
UN Number:	UN3265
Packing Group:	III
Marine Pollutant:	No applicable information available
NMFC Number/Class:	101685/85

15. Regulatory Information:

SARA TITLE III:	
311/312 HAZARD CATEGORY:	Acute health
313 TOXIC CHEMICALS:	None
CERCLA:	Not applicable
TSCA:	Exempted - solely for FIFRA regulated use

Component Analysis – State:
 The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
No component listed							

California Prop 65: Not listed

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

EPA signal word: DANGER
 Classifications under 40 CFR 156.63 are given in sections 9 and 11 where applicable

Precautionary Statements: **DANGER. Corrosive. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Do not inhale vapors as this product will irritate mucous membranes.**

Pictograms/Symbols: None

16. Other Information:

None	
Issue Date/Version:	3/1/21 V1
Supersedes:	Not applicable