

**SAFETY DATA SHEET**  
Command 360 ME Herbicide

SDS # : 1693-4-A  
Revision date: 2019-04-02  
Format: NA  
Version 1



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** Command 360 ME Herbicide

**Other means of identification**

**Product Code(s)** 1693-4-A

**Synonyms** Clomazone (F57020): 2-(2-chlorobenzyl)-4,4-dimethyl-1,2-oxazolidin-3-one (IUPAC name); 2-[(2-chlorophenyl)methyl]-4,4-dimethyl-3-isoxazolidinone (CAS Name)

**Active Ingredient(s)** Clomazone

**Chemical Family** Triazolinones

**Alternate Commercial Name** Command® 360 ME, Command® 36 CS, Command® 360 CS, Command® CS, Centium™ 36 CS, Cirrus™ 36 CS, Cirrus™ CS, Magister CS, Director CS

**PCP #** 27827

**Recommended use of the chemical and restrictions on use**

**Recommended Use:** Herbicide

**Restrictions on Use:** Use as recommended by the label.

**Supplier Address**

FMC Corporation  
2929 Walnut Street  
Philadelphia, PA 19104  
(215) 299-6000 (General Information)  
msdsinfo@fmc.com (E-Mail General Information)

**Emergency telephone number**

Medical Emergencies :  
1 800 / 331-3148 (U.S.A. & Canada)  
1 651 / 632-6793 (All Other Countries - Collect)

For leak, fire, spill or accident emergencies, call:  
1 800 / 424-9300 (CHEMTREC - U.S.A.)  
1 703 / 741-5970 (CHEMTREC - International)  
1 703 / 527-3887 (CHEMTREC - Alternate)

**2. HAZARDS IDENTIFICATION**

**Classification**

**OSHA Regulatory Status**


This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)

Category 4

Skin sensitization	Category 1B
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**GHS Label elements, including precautionary statements****EMERGENCY OVERVIEW**

<p><b>Warning</b></p> <p><b>Hazard Statements</b> H317 - May cause an allergic skin reaction H332 - Harmful if inhaled</p> 
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**Precautionary Statements - Prevention**

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P271 - Use only outdoors or in a well-ventilated area  
P272 - Contaminated work clothing should not be allowed out of the workplace  
P280 - Wear protective gloves

**Precautionary Statements - Response**

P321 - Specific treatment (see supplemental first aid instructions on label)  
P302 + P352 - IF ON SKIN: Wash with plenty of water and soap  
P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention  
P363 - Wash contaminated clothing before reuse  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P312 - Call a POISON CENTER or doctor if you feel unwell

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

Very toxic to aquatic life with long lasting effects.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Family** Triazolinones.

Chemical name	CAS-No	Weight %
Clomazone	81777-89-1	31
Sodium Nitrate	7631-99-4	1-5
Calcium chloride	10043-52-4	1-5
1,6-hexanediamine (70%)	124-09-4	1-5

Synonyms are provided in Section 1.

**4. FIRST AID MEASURES****Eye Contact**

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison

control center or doctor for further treatment advice.

<b>Skin Contact</b>	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
<b>Most important symptoms and effects, both acute and delayed</b>	Symptoms of overexposure include decreased activity, tearing eyes, bleeding from the nose and incoordination.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Notes to physician: A specific antidote for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After decontamination, treatment should be directed at the control of symptoms and the clinical condition.

**5. FIRE-FIGHTING MEASURES**

<b>Suitable Extinguishing Media</b>	Carbon dioxide (CO <sub>2</sub> ), Water spray, Foam, Dry chemical.
<b>Unsuitable extinguishing media</b>	High volume water jet.
<b>Specific Hazards Arising from the Chemical</b>	Thermal decomposition can lead to release of irritating gases and vapors
<b>Explosion data</b>	No information available.
<b>Sensitivity to Mechanical Impact</b>	No information available.
<b>Sensitivity to Static Discharge</b>	No information available.
<b>Protective equipment and precautions for firefighters</b>	Isolate fire area. Evaluate upwind. As in any fire, wear self-contained breathing apparatus and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	It is recommended to have a predetermined plan for the handling of spills. Empty, closable vessels for the collection of spills should be available.  In case of large spill (involving 10 tonnes of the product or more):  Observe all safety precautions when cleaning up spills. Use personal protection equipment. Depending on the magnitude of the spill this may mean wearing respirator, face mask or eye protection, chemical resistant clothing, gloves and rubber boots. Stop the source of the spill immediately if safe to do so. Keep unprotected persons away from the spill area.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>For emergency responders</b>	Use personal protection recommended in Section 8.
<b>Environmental Precautions</b>	Contain the spill to prevent any further contamination of surface, soil or water. Wash waters must be prevented from entering surface water drains. Uncontrolled discharge into water courses must be alerted to the appropriate regulatory body.
<b>Methods for Containment</b>	It is recommended to consider possibilities to prevent damaging effects of spills, such as bunding or capping. Use non-sparking tools and equipment. If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and much water. Absorb wash liquid onto inert absorbent such as universal binder, Fuller's earth, bentonite

or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

**Methods for cleaning up**

If appropriate, surface water drains should be covered. Minor spills on the floor or other impervious surface should be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with damp cloth and/or strong industrial detergent with much water. Absorb wash liquid onto a suitable absorbent such as universal binder, attapulgite, bentonite or other absorbent clays and transfer contaminated absorbent to suitable containers. The used containers should be properly closed and labelled.

spills which soak into the ground should be dug up and transferred to suitable containers. in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal.

## 7. HANDLING AND STORAGE

**Handling**

In an industrial environment it is recommended to avoid all personal contact with the product, if possible by using closed systems with remote system control. Otherwise it is recommended to handle the material by mechanical means as much as possible. Adequate ventilation or local exhaust ventilation is required. The exhaust gases should be filtered or treated otherwise. For personal protection in this situation, see section 8. For its use as a pesticide, first look for precautions and personal protection measures on the officially approved label on the packaging or for other official guidance or policy in force. If these are lacking, see section 8. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use.

**Storage**

Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Keep/store only in original container.

**Incompatible products**

None known

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

To our knowledge, personal exposure limits have not been established for the active ingredient in this product.

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
1,6-hexanediamine (70%) (124-09-4)	TWA: 0.5 ppm	-	-	Mexico: TWA 0.5 ppm
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Calcium chloride (10043-52-4)	-	-	TWA: 5 mg/m <sup>3</sup>	-
1,6-hexanediamine (70%) (124-09-4)	TWA: 0.5 ppm	TWA: 0.5 ppm TWA: 2.3 mg/m <sup>3</sup>	TWA: 0.5 ppm	TWA: 0.5 ppm TWA: 2.4 mg/m <sup>3</sup>

**Appropriate engineering controls****Engineering measures**

Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

**Individual protection measures, such as personal protective equipment****Eye/Face Protection**

For dust, splash, mist or spray exposure, wear chemical protective goggles. Maintain eye wash fountain and quick-drench facilities in work area.

**Skin and Body Protection**

Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection**

Wear chemical protective gloves made of materials such as nitrile or neoprene

<b>Respiratory Protection</b>	For dust, splash, mist or spray exposures, wear a filtering mask.
<b>Hygiene measures</b>	Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.
<b>General information</b>	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Brown Liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Brown
<b>Odor</b>	Slight Aromatic
<b>Odor threshold</b>	No information available
<b>pH</b>	6.5 @ 20°C
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	> 94 °C / > 201 °F Tag Closed Cup
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available Not flammable
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Relative density</b>	9.59 lb/gal
<b>Specific gravity</b>	No information available
<b>Water solubility</b>	Dispersible in water
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	417-430 cps
<b>@ 23° C</b>	
<b>Explosive properties</b>	Not explosive
<b>Oxidizing properties</b>	No information available
<b>Molecular weight</b>	No information available
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	None under normal use conditions
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks
<b>Incompatible materials</b>	None known.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx), Nitrogen oxides (NOx), Chlorine, Hydrogen chloride.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

LD50 Oral > 5000 mg/kg (rat)  
 LD50 Dermal > 5000 mg/kg (rat)  
 LC50 Inhalation > 3.86 mg/L 4 hr (rat) - Maximum attainable concentration (zero mortality)

Serious eye damage/eye irritation Non-irritating.  
 Skin corrosion/irritation Non-irritating.  
 Sensitization Did not cause sensitization on laboratory animals (mouse)

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium Nitrate (7631-99-4)	= 1267 mg/kg ( Rat )		
Calcium chloride (10043-52-4)	= 1000 mg/kg ( Rat )	> 5000 mg/kg ( Rabbit )	
1,6-hexanediamine (70%) (124-09-4)	= 750 mg/kg ( Rat )	= 1110 mg/kg ( Rabbit )	

**Information on toxicological effects**

**Symptoms** Large dosages of clomazone ingested by laboratory animals produced signs of toxicity including ataxia, decreased activity, oral discharge, lacrimation, bloody tears, and nasal discharge.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic toxicity** Clomazone: Long-term exposure caused slight liver weight increase and hepatocyte enlargement in animal studies.

**Mutagenicity** Clomazone: Not genotoxic in animal studies

**Carcinogenicity** Clomazone: No evidence of carcinogenicity from animal studies.

**Neurological effects** Clomazone: Not neurotoxic.

**Reproductive toxicity** Clomazone: No toxicity to reproduction in animal studies.

**Developmental toxicity** Clomazone: Not teratogenic in animal studies.

**STOT - single exposure** None under normal use conditions.

**STOT - repeated exposure** None under normal use conditions.

**Target organ effects** Clomazone: Liver

**Neurological effects** Clomazone: Not neurotoxic.

**Aspiration hazard** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Very toxic to aquatic life with long lasting effects

Clomazone (81777-89-1)				
Active Ingredient(s)	Duration	Species	Value	Units
Clomazone	72 h EC50	Algae	0.136	mg/L
	48 h EC50	Crustacea	12.7	mg/L
	96 h LC50	Fish	15.5	mg/L
	21 d NOEC	Fish	2.30	mg/L
	21 d NOEC	Crustacea	2.2	mg/L
	96 h NOEC	Algae	0.05	mg/L

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Calcium chloride 10043-52-4		96 h LC50: = 10650 mg/L (Lepomis macrochirus) static	48 h LC50: 2280000 - 3948000 µg/L (Daphnia magna)
1,6-hexanediamine (70%) 124-09-4	96 h EC50: = 14.8 mg/L (Pseudokirchneriella subcapitata) 72 h EC50: = 15 mg/L (Pseudokirchneriella subcapitata)	96 h LC50: = 1825 mg/L (Pimephales promelas) static 96 h LC50: = 62 mg/L (Leuciscus idus) static 96 h LC50: > 56 mg/L (Lepomis macrochirus) static	48 h EC50: = 23.4 mg/L (Daphnia magna)
Sodium Hydroxide 1310-73-2		96 h LC50: = 45.4 mg/L (Oncorhynchus mykiss) static	
Acetic Acid 64-19-7		96 h LC50: = 75 mg/L (Lepomis macrochirus) static 96 h LC50: = 79 mg/L (Pimephales promelas) static	24 h EC50: = 47 mg/L (Daphnia magna) 48 h EC50: = 65 mg/L (Daphnia magna) Static
Potassium chloride 7447-40-7	72 h EC50: = 2500 mg/L (Desmodesmus subspicatus)	96 h LC50: 750 - 1020 mg/L (Pimephales promelas) static 96 h LC50: = 1060 mg/L (Lepomis macrochirus) static	48 h EC50: = 825 mg/L (Daphnia magna) 48 h EC50: = 83 mg/L (Daphnia magna) Static
Sodium Nitrate 7631-99-4		96 h LC50: 994.4 - 1107 mg/L (Oncorhynchus mykiss) static 96 h LC50: = 2000 mg/L (Lepomis macrochirus) static	
Sodium chloride 7647-14-5		96 h LC50: 4747 - 7824 mg/L (Oncorhynchus mykiss) flow-through 96 h LC50: 5560 - 6080 mg/L (Lepomis macrochirus) flow-through 96 h LC50: 6020 - 7070 mg/L (Pimephales promelas) static 96 h LC50: 6420 - 6700 mg/L (Pimephales promelas) static 96 h LC50: = 12946 mg/L (Lepomis macrochirus) static 96 h LC50: = 7050 mg/L (Pimephales promelas) semi-static	48 h EC50: 340.7 - 469.2 mg/L (Daphnia magna) Static 48 h EC50: = 1000 mg/L (Daphnia magna)

**Persistence and degradability** Clomazone: Moderately persistent. Does not readily hydrolyze. Not readily biodegradable.

**Bioaccumulation** Clomazone: The substance does not have a potential for bioconcentration.

**Mobility** Clomazone: Moderately mobile. Has some potential to reach groundwater.

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal methods** Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

**Contaminated Packaging** Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions. It is recommended to consider possible ways of disposal in the following order:

1. Reuse or recycling should first be considered. Reuse is prohibited except by the authorisation holder. If offered for recycling, containers must be emptied and triply rinsed (or equivalent). Do not discharge rinsing water to sewer systems.
2. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.
3. Delivery of the packaging to a licensed service for disposal of hazardous waste.
4. Disposal in a landfill or burning in open air should only occur as a last resort. For disposal in a landfill containers should be emptied completely, rinsed and punctured to make them unusable for other purposes. If burned, stay out of smoke.

**14. TRANSPORT INFORMATION**

**DOT** This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

**TDG** Not regulated

**ICAO/IATA**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s, (Clomazone)  
**Hazard class** 9  
**Packing Group** III  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s, Clomazone, 9, III

**IMDG/IMO**

**UN/ID no** UN3082  
**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s, (Clomazone)  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Special Provisions** Do not release to the environment  
**Marine Pollutant** Yes  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s, Clomazone, 9, III

**15. REGULATORY INFORMATION**

**U.S. Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

**Acute health hazard** Yes  
**Chronic health hazard** Yes  
**Fire hazard** No  
**Sudden release of pressure hazard** No  
**Reactive Hazard** No

**Clean Water Act**

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb			X
Acetic Acid 64-19-7	5000 lb			X

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sodium Hydroxide 1310-73-2	1000 lb 454 kg	
Acetic Acid 64-19-7	5000 lb 2270 kg	



**Command 360 ME Herbicide**

**SDS # : 1693-4-A**  
**Revision date: 2019-04-02**  
**Version 1**

*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:*

**CAUTION**  
 Causes eye irritation.

**US State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
Sodium Nitrate 7631-99-4		X	X
1,6-hexanediamine (70%) 124-09-4	X	X	

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Clomazone 81777-89-1					X	X		
Sodium Nitrate 7631-99-4	X	X	X	X	X	X	X	X
Calcium chloride 10043-52-4	X	X	X	X	X	X	X	X
1,6-hexanediamine (70%) 124-09-4	X	X	X	X	X	X	X	X

**Mexico - Grade** Moderate risk, Grade 2

Chemical name	Carcinogen Status	Mexico
1,6-hexanediamine (70%)		Mexico: TWA 0.5 ppm

Chemical name	Mexico - Pollutant Release and Transfer Register - Reporting Emissions for Fabrication, Process or Use -Threshold Quantities	Pollutant Release and Transfer Register - Reporting Emissions - Threshold Quantities
Methylene diphenyl diisocyanate (polymeric)	100 5000 kg/yr	100 kg/yr

**WHMIS Statement**

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**WHMIS Hazard Class** D2B - Toxic materials



