



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT IDENTIFICATION

Product Name: Super Boll™
Synonyms: Ethephon, GX-409
General/Generic ID: Plant Regulator for Cotton
Chemical Name: (2-Chloroethyl)phosphonic acid
Chemical Formula: C₂H₆ClO₃P

HAZARD CLASSIFICATION (0-minimal, 1-slight, 2-moderate, 3-serious, 4-severe)

NFPA: HEALTH-3 FIRE-1 REACTIVITY-1
HMIS: HEALTH-3 FIRE-1 REACTIVITY-1

MANUFACTURER

Company Name: Griffin Corporation
Address: PO Box 1847, Rocky Ford Road
Valdosta, GA 31603-1847

EMERGENCY TELEPHONE NUMBERS

Griffin Corporation: (800) 237 1854
Chemtrec: (800) 424 9300

2. COMPOSITION/ INFORMATION ON INGREDIENTS

Component Name	% by Wt.	CAS#	ACGIH TLV	OSHA PEL
Ethephon [(2-Chloroethyl)phosphonic acid]	55.4	16672-87-0	Not established	Not established

Components not precisely identified are proprietary or not hazardous.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a strong acid and corrosive. The hazards associated with this product are mainly due to its irritant properties on mucosal surfaces. See below for route-specific details.

POTENTIAL HEALTH EFFECTS

Inhalation: Harmful if inhaled. Sprays (mists) are irritating to the respiratory tract. Signs and symptoms may include choking, coughing, burning of the throat.
Eye Irritation: Corrosive. Causes irreversible eye damage, seen as corneal opacity. Vapors or sprays (mists) are irritating to the eyes. Causes tearing, redness, and possible swelling of the conjunctiva.
Skin Irritation: Causes skin irritation, seen as marked redness and swelling.



Hazards Identification continued:

Skin Absorption:	Harmful if absorbed through the skin.
Ingestion:	Harmful if swallowed. May cause severe irritation of the mouth, throat, esophagus and stomach with severe abdominal and chest pain.
Chronic:	Repeated overexposure may cause bronchial irritation, with persistent cough and predisposition to respiratory infections.
Existing Medical Conditions Possibly Aggravated by Exposure:	Skin irritation may be aggravated in persons with existing skin lesions. Breathing of vapor or sprays (mists) may aggravate acute and chronic asthma and other chronic pulmonary diseases.

4. FIRST AID MEASURES

Inhalation:	Remove victim to fresh air. If not breathing, give artificial respiration. Administer oxygen if necessary. Get medical attention.
Eye Contact:	Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Get medical attention, preferably an ophthalmologist.
Skin Contact:	Immediately wash skin with plenty of soap and water, while removing contaminated clothing and shoes. Shoes and clothing contaminated by substantial spillage of concentrated product should be discarded in a manner which limits further exposure. Otherwise, wash clothing separately before reuse. Get medical attention.
Ingestion:	If patient is conscious and alert, give 2-3 glasses of water to drink. Do not induce vomiting. Get medical attention.
Emergency Medical Treatment:	PRECAUTION: Persons attending the victim should avoid direct contact with heavily contaminated clothing and vomitus. Wear impervious gloves while decontaminating skin and hair. Remove patient from immediate source of exposure and assure that the individual is breathing. Use artificial respiration if necessary, to assure continued breathing. Get medical attention.
Notes to Physician:	No specific antidote is available. Treat symptomatically. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. The primary toxicity of this product is due to its irritant properties on mucosal surfaces.



First Aid Measures continued:

Notes to Physician: Victims of severe overexposure, by inhalation, should be kept under medical observation for up to 72 hours for delayed onset of pulmonary edema. In a victim of overexposure by ingestion, careful gastric lavage is required due to the possibility of stomach or esophageal perforation. This material is an acid, but the use of alkaline substances to neutralize is contraindicated. Based on the results of animal studies, this product may cause mild to moderate peripheral cholinesterase inhibition, depending on the degree and duration of exposure. Central nervous system cholinesterase depression has not been observed in any of the animal studies. Signs and symptoms of cholinergic poisoning have not been observed in any of the animal studies. The usefulness of conventional treatment for cholinesterase inhibiting agents, i.e. atropinization, has not been established for this product.

5. FIRE FIGHTING MEASURES

Flash Point & Method: Noncombustible.
Flammable Limits: None.
Autoignition Temperature: None.

FIRE FIGHTING HAZARDS & PROCEDURES

Extinguishing Media: Not combustible. Use appropriate extinguishing media for material that is supplying fire.
Fire Fighting Instructions: Dike off area to prevent runoff and contamination of water sources.
Fire Fighting Equipment: Wear protective clothing and self-contained breathing apparatus.
Hazardous Combustion Products: Thermal decomposition products may be hazardous. These may include hydrogen chloride.

6. ACCIDENTAL RELEASE MEASURES

Spill or Leak Procedures: Dike large spills using absorbent or impervious materials such as sand or clay. Recover and contain as much free liquid as possible. Recover remaining spilled material as appropriate. Collect and contain contaminated absorbent and dike material for disposal.
Absorb small spills on sand or vermiculite. Place contaminated material in appropriate container for disposal.



Accidental Release Measures continued:

Spill or Leak Procedures(cont): If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal. Do not flush material to public sewer systems or any waterways. Wear appropriate protective clothing and equipment (see below) during cleanup activities. Ensure adequate decontamination of tools and equipment following cleanup.

7. HANDLING AND STORAGE

Storage Temperature: Not applicable.
General Information: Do not get in eyes, on skin, or on clothing. Do not swallow. Avoid breathing vapors or spray (mists). Do not store near food, feedstuffs, fertilizers, or seed. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

PESTICIDE APPLICATORS & WORKERS

These workers must refer to the Product Label and Directions For Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170.

Protective equipment should be used during the following procedures:

- Manufacture or formulation of this product
- Repair and maintenance of contaminated equipment
- Clean-up of leaks and spills

Ventilation: Mechanical (general) ventilation.
Respiratory Protection: Use NOSH/MSHA approved respirator for pesticide mist when handling spills or leaks, or when airborne concentrations are high.
Eye Protection: Face shield, goggles, eye bath.
Protective Clothing: Chemical-resistant gloves, ie PVC or neoprene. Full-body protective clothing, safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Vapor Pressure: 0.0000605 mm Hg (ethephon)
Specific Gravity: 1.302 at 20°C
Solubility in Water: Soluble
pH: 0.8
Boiling Point: No data



Physical and Chemical Properties continued:

Freezing Point:	< -40°C (-66°F)
Decomposition Point:	170°C (338°F)
Odor:	Characteristic mild odor
Color:	Clear to slightly hazy yellow
Physical State:	Liquid

10. STABILITY AND REACTIVITY

General:	This material is stable under normal conditions.
Incompatible Materials:	Concentrated oxidizing agents and alkaline materials. Corrosive to metals such as iron, aluminum and copper.
Conditions to Avoid:	Decomposes at temperatures above 170°C (338°F). Decomposes at pH greater than 3.
Hazardous Decomposition:	Hydrogen chloride may be produced upon decomposition. Reaction with bases causes evolution of ethylene gas.
Hazardous Polymerization:	Material is not known to polymerize.

11. TOXICOLOGICAL INFORMATION

ACUTE (ethephon)

Inhalation:	Acute inhalation LC ₅₀ >2.28 mg/L (rat - 4 hour).
Eye Irritation:	Corrosive (rabbit).
Skin Irritation:	Considered to have elicited a sensitizing reaction in guinea pigs.
Skin Absorption:	Acute dermal LD ₅₀ =2,020 mg/kg (rabbit).
Ingestion:	Oral LD ₅₀ = 2,417 mg/kg (rat).

CHRONIC:

Carcinogenicity, Teratogenicity, Mutagenicity:	The active ingredient in this product was not mutagenic in “in vitro” or “in vivo” studies. In addition, the active ingredient has been shown not to be teratogenic or carcinogenic in animal studies. This product does not contain any chemicals listed as carcinogens by IARC, NTP or OSHA.
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12. ECOLOGICAL INFORMATION

For detailed ecological information, write to the address listed in Section 1 of this Material Safety Data Sheet or call 912/242-8635 and ask for Regulatory Affairs.

13. DISPOSAL CONSIDERATIONS

Comply with appropriate disposal regulations. Landfill solids at permitted sites. Use registered transporters.



14. TRANSPORT INFORMATION

Department of Transportation (DOT)/International Air Transport Association (IATA)/International Maritime Organization (IMO):

Proper Shipping Name: Corrosive Liquid, Acidic, Organic, N.O.S. (55% ethephon)
Class: 8
Identification Number: UN 3265
Packing Group: III

15. REGULATORY INFORMATION

OSHA: This product is considered hazardous under the OSHA Hazardous Communication Standard (29 CFR 1910.1200).
TSCA: All product components are on the TSCA Chemical Inventory.
CERCLA: Releases of this material to air, land, or water in amounts of 100 lbs or greater are reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to the state and local emergency planning committees under the Superfund Amendments and Reauthorization Act (SARA) Title II Section 304.
RCRA: When a decision is made to discard this material as supplied, it does meet RCRA's characteristic definition of corrosivity and is listed in 40 CFR 261.33.
SARA TITLE III
302: Not listed
311/312 Hazard Categories: This product has been reviewed according to the EPA "Hazard Categories" and is categorized as an acute health hazard (40 CFR 370.41)
313 Reportable Ingredients: This product does not contain a chemical which is listed in Section 313 above de minimis concentrations (40 CFR 372).
STATE REGULATIONS: None listed

16. OTHER INFORMATION

REVISION SUMMARY

This Material Safety Data Sheet has been revised using the standard Griffin Corporation ANSI Z400.1 compliant format and replaces the one dated 11/95. Revisions were made in Section 14.

Super Boll™ is a trademark of Griffin Corporation.

The information in this Material Safety Data Sheet relates to this specific material. It may not be valid for this material if used in combination with any other materials or in any process. It is the users' responsibility to satisfy themselves as to the suitability and completeness of this information for their own particular use.