

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION****Product Name:** CottonQuik® Cotton Harvest Aid/Defoliant**EPA Reg. No.:** 228-607**Product Type:** Harvest Aid/Defoliant**Company Name:** Nufarm Americas, Inc.
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330**Telephone Numbers:** For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION**PHYSICAL HAZARDS:**

Corrosive to Metals

Category 1

HEALTH HAZARDS:

Acute Toxicity Oral

Category 4

Eye Damage

Category 1

Skin Irritation

Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute

Category 1

Hazardous to aquatic environment, chronic

Category 1

SIGNAL WORD:

DANGER

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**

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.

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.

Store in corrosive resistant container with a resistant inner liner.

Dispose of contents in accordance with local, state, and federal regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Urea Sulfate	21351-39-3	58.6
Ethephon	16672-87-0	18.3
Other Ingredients	Trade Secret	Trade Secret
Synonyms:	Mixture of Urea Sulfate and Ethephon	

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye 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 treatment advice.

If Swallowed: Call a poison control center or doctor for treatment advice. Do not give any liquid to the person. 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.

If Inhaled: Move person to fresh air. Call a poison control center or doctor for further treatment advice.

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for several minutes. Call a poison control center or doctor for treatment advice.

Most Important symptoms/effects, acute and delayed: Causes severe eye irritation with possible burns. Causes skin irritation. Harmful if swallowed.

Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention is required for eye contact.

Note to Physician: There is no specific antidote. Treat symptomatically. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Acid ingestion may cause gastroesophageal perforation. Perforation may occur within 72 hours, but along with abscess formation, may occur weeks later. Due to the corrosive property of this material, emesis is contraindicated. Probable mucosal damage may contraindicate the use of gastric lavage. The use of alkaline substances to neutralize the acid is contraindicated. Victims of severe overexposure by inhalation should be kept under medical observation for up to 72 hours for delayed onset of pulmonary edema.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

Special Fire Fighting Procedures: 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.

Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: 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.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and 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 cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Do not get in eyes or on clothing or skin. Avoid breathing spray mist. 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.

STORAGE: Material crystallizes below 32° F. Do not heat above 176° F. Materials recommended for use with this product include polyethylene, polypropylene, PVC, CPVC, fiberglass made with reinforced resins such as polyesters and epoxides, most rubbers and 316 stainless steel. Do not expose mild steel, leather, nylon or acid sensitive resins such as delrin and celcon to undiluted material. Do not contaminate water, food, or feed by storage or disposal. Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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.

Eye/Face Protection: 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.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

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.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Urea Sulfate	NE	NE	NE	NE	
Ethephon	NE	NE	NE	NE	

Other Ingredients	NE	NE	NE	NE	
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NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, yellow-orange or pink colored liquid
Odor:	No data available
Odor threshold:	No data available
pH:	< 2.0 (1% solution)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	Not applicable
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.49 g/ml @20° C
Solubility(ies):	Soluble
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	47.32 cPs @ 20°C

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.

Chemical Stability: This material is stable under normal handling and storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Do not allow product to be heated above 176° F, as the quality of the product may deteriorate. If this product is heated above 230° F, vigorous decomposition may occur. Do not weld equipment containing this product.

Incompatible Materials: Concentrated oxidizing agents and alkaline materials. Corrosive to metals such as iron, aluminum and copper. Do not mix with materials containing chlorates as this could result in the formation of hypochlorous acids which on heating will emit toxic chlorine fumes.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride, oxides of carbon and reactions with bases cause evolution of ethylene gas.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin contact, eye contact

Symptoms of Exposure:

Eye Contact: Causes serious eye irritation with possible damage based on toxicity studies.

Skin Contact: Minimally toxic based on toxicity studies. Causes skin irritation based on toxicity studies.

Ingestion: Harmful if swallowed based on toxicity studies.

Inhalation: Low inhalation toxicity based on toxicity studies.

Toxicological Data:

Data from laboratory studies conducted are summarized below:

Oral: Rat LD₅₀: >500 and <5,000 mg/kg

Dermal: Rat LD₅₀: >2,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.05 mg/L

Eye Irritation: Rabbit: Corrosive (irreversible destruction of ocular tissue)

Skin Irritation: Rabbit: Moderately irritating (PDII = 2.3)

Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to ethephon may cause cholinesterase inhibition, red blood cell effects and/or kidney effects. Repeated overexposure to urea sulfate may affect the lungs.

Carcinogenicity / Chronic Health Effects: 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. No known carcinogenicity risks associated with urea sulfate.

Reproductive 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. No known risks associated with urea sulfate.

Developmental Toxicity: Ethephon did not cause developmental effects in animals No known risks associated with urea sulfate.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that ethephon is not genotoxic or mutagenic. No known risks associated with urea sulfate.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Urea Sulfate:

96-hour LC ₅₀ Threespine sickleback	62.8 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>5,620 ppm
48-hour EC ₅₀ Daphnia:	35 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
Honey Bee LD ₅₀ :	>100 ug/bee		

Data on Ethephon (75%):

96-hour LC ₅₀ Fathead Minnow:	88 mg/L	Bobwhite Quail Oral LD ₅₀	596 mg/kg
48-hour EC ₅₀ Daphnia:	54 ppm	Mallard Duck 8-day Dietary LC ₅₀ :	>5,000 ppm

Environmental Fate:

Urea sulfate rapidly dissociates to urea and sulfuric acid and/or sulfate ions. Biodegradation is expected to be the major fate process for urea, producing ammonia and CO₂. Sulfuric acid can acidify soil or water ecosystems. 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. 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.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

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.

Container Handling and Disposal:

14. TRANSPORTATION INFORMATION

DOT:

UN 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (UREA SULFATE AND ETHEPHON) 8, III

IMDG:

UN 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (UREA SULFATE AND ETHEPHON) 8, III

IATA:

UN 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., (UREA SULFATE AND ETHEPHON) 8, III

15. REGULATORY INFORMATION**EPA FIFRA INFORMATION**

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

DANGER. Corrosive. Causes irreversible eye damage. Do not get in eyes or on clothing. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Acute Health

Section 313 Toxic Chemical(s):

None

Reportable Quantity (RQ) under U.S. CERCLA:

None

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 3 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all

SAFETY DATA SHEET

CottonQuik® Cotton Harvest Aid/Defoliant

necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

Date of Issue: May 17, 2015

Supersedes: October 31, 2014