MATERIAL SAFETY DATA SHEET #2305

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I. PRODUCT IDENTIFICATION

PRODUCT NAME: LESCO Allectus™ 0.18 G Plus Fertilizer; LESCO Allectus™ 0.18 GC Plus Fertilizer; LESCO Allectus™ 0.225 Insecticide Plus Fertilizer; LESCO Allectus™ 0.225 GC Insecticide Plus Fertilizer

Chemical Family: NA
Chemical Name/Synonyms: NA

II. COMPOSITION/INFORMATION ON INGREDIENTS

Formulated with one or more of the following ingredients. Check specific product label.

CHEMICAL NAME	%(by/wt.)	CAS #	PEL/TLV
Bifenthrin Technical	0.08 – 0.100	82657-04-3	NE
Imidacloprid Technical	0.1 – 0.125	138261-41-3	NE
Calcium Carbonate	15 – 90	471-34-1	15 mg/m^3 (dust) 5 mg/m^3 (resp)
Urea	15 – 40	57-13-6	10 mg/m^3 (dust) 5 mg/m^3 (resp)
Potassium Chloride	5 – 20	7447-40-7	10 mg/m^3
Potassium Sulfate	5 – 20	7778-80-5	10 mg/m^3
Monoammonium Phosphate	5 – 20	7722-76-1	15 mg/m^3 (dust) 15 mg/m^3 (TLV)
Diammonium Phosphate	0 – 8	7783-28-0	10 mg/m^3
Iron Oxide, Saccharated	0 – 4	8047-67-4	NE
Sulfur	0 – 3	7704-34-9	5 ppm (SO^2)
Quartz (SiO2)	0 – 1	14808-60-7	10 mg/m^3 + (%SiO_2+2)

III. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Primary Route(s) of Entry: Eyes, Skin, Inhalation, Ingestion
POTENTIAL HEALTH EFFECTS: Caution. Harmful if swallowed, inhaled or absorbed through skin.
EYE: Causes moderate eye irritation.
SKIN: Harmful if absorbed through skin. Avoid contact with skin.
INHALATION: Harmful if inhaled. Do not breathe vapors/dust.
INGESTION: Harmful if swallowed.
MEDICAL CONDITIONS AGGRAVATED: None known
POTENTIAL ENVIRONMENTAL HAZARDS:
This product is extremely toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate. Run-off may be hazardous to aquatic organisms in water adjacent to treated areas.
This product contains a chemical with properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

IV. FIRST AID MEASURES

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.
SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

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.
INGESTION: 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.
NOTES TO MEDICAL DOCTOR: No specific antidote is available. Treat the patient symptomatically. This product contains a pyrethroid. If large amounts have been ingested, milk, cream and other digestible fats and oils may increase absorption and so should be avoided.

V. FIRE FIGHTING MEASURES

Flash Point (Method Used): NA
Auto Ignition Temperature: NA
Lower Explosion Limits: NA
Upper Explosion Limits: NA
NFPA/HMIS Rating: Health: 1 Fire: 1 Reactivity: 1

EXTINGUISHING MEDIA:

[X]	Foam	[ ]	Alcohol Foam	[X]	CO_2
[X]	Dry Chemical	[X]	Water	[ ]	Other

EXPLOSION HAZARDS: Irritating or toxic substances may be emitted upon thermal decomposition.
FIRE FIGHTING PROCEDURES: Wear self-contained breathing apparatus and protective suit. Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Contain contaminated water/fire fighting water. Dike area to prevent run-off and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated. Prevent use of contaminated buildings, area, and equipment until decontaminated.
HAZARDOUS COMBUSTION PRODUCTS: Heating above 270F urea decomposes to biuret, ammonia, and nitrogen oxides. When subjected to extremely high temperatures, Potash may release small quantities of chlorine gas. Bifenthrin decomposition products include carbon monoxide, carbon dioxide, hydrogen chloride and hydrogen fluoride.

VI. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: If material is spilled, carefully contain any spilled material to prevent non-target contamination. Do not walk through spilled material. Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. Avoid dust formation. Avoid breathing dust. Avoid contact with skin. Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways.

VII. HANDLING AND STORAGE

GENERAL PROCEDURES: Do not contaminate water, food, or feed by storage or disposal. Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. Handle and open container in a manner as to prevent spillage.
OTHER PRECAUTIONS: Keep out of reach of children and animals.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation.
PERSONAL PROTECTION EQUIPMENT:

EYES AND FACE: Safety glasses or chemical goggles to prevent contact
RESPIRATORY: NIOSH approved equipment based on actual or potential airborne concentrations
GLOVES: Chemical resistant gloves made of materials such as nitrile
PROTECTIVE CLOTHING: Long-sleeved shirt, long pants, shoes plus socks

WORK HYGENIC PRACTICES: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. Remove PPE immediately after handling this product. Before removing gloves, clean them with soap and water. As soon as practical, wash thoroughly and change into clean clothing. Leather items such as shoes, belts and watchbands that become contaminated should be removed and destroyed.
COMMENTS: Have eye wash facilities available where eye contact could occur.

IX. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: NA
MELTING POINT: ND
VAPOR DENSITY (air = 1): NA
ODOR: Slight solvent and ammonia
APPEARANCE: Multi-colored granules
pH: 5.5 – 8.0 @ 25C (as aqueous solution)
SPECIFIC GRAVITY: ND
EVAPORATION RATE: NA
VAPOR PRESSURE: NA
SOLUBILITY IN WATER: ND
PERCENT VOLATILE: ND
BULK DENSITY (lbs./cu ft): 54 – 85

X. STABILITY AND REACTIVITY

CONDITIONS TO AVOID:
Imidacloprid: >200C
Urea may slowly hydrolyze to ammonium carbamate after a long period of time which decomposes to ammonia and carbon dioxide
STABILITY: Stable under normal conditions
POLYMERIZATION: Will not occur
INCOMPATIBLE MATERIALS:
Urea: Avoid contact with strong oxidizers, acids or bases. Avoid contact with Nitrates. Reacts with sodium or Calcium Hypochlorite to form explosive Nitrogen Trichloride.
Potash: Contact with strong acids may produce hydrogen chlorine gas; contact with hot nitric acid may produce toxic nityrosyl chloride.
HAZARDOUS DECOMPOSITION PRODUCTS:
Imidacloprid: Hydrogen chloride, hydrogen cyanide (hydrocyanic acid), carbon monoxide, nitrogen oxides.
Urea: Decomposes to ammonia, biuret, nitrogen oxides, carbon oxides.
Diammonium phosphate: ammonia is released upon reaction with strong bases or from thermal decomposition.

XI. TOXICOLOGICAL INFORMATION

*****Acute toxicity studies have not been performed on this product as formulated. The acute toxicity data provided have been bridged from a similar granular formulation containing a higher percentage of the active ingredients, bifenthrin and imidacloprid. The non-acute information pertains to the technical-grade active ingredients.
EYE EFFECTS: (Rabbit): Mild irritant
SKIN EFFECTS: (Rabbit): Slight irritation
DERMAL LC_{50}: (Male/Female Rat): >5,000 mg/kg
ORAL LD_{50}: (Female Rat): >5,000 mg/kg
INHALATION LC_{50}: The acute inhalation hazard of this product is not expected to be a toxicological concern based on the large particle size of the granular product.
SENSITIZATION: (Guinea pig): Non-sensitizing
ACUTE EFFECTS FROM OVEREXPOSURE:
Imidacloprid Technical: In a 3-week dermal toxicity study, rabbits treated with imidacloprid showed no local or systemic effects at levels up to and including 1,000 mg/kg, the limit dose. In a 4-week inhalation study, rats exposed to high concentrations of imidacloprid exhibited decreased body weight gains and changes in clinical chemistries and organ weights.
Bifenthrin Technical: In a 21-day dermal toxicity study in rabbits, bifenthrin caused a loss of muscle coordination. In subchronic toxicity studies, tremors were observed in rats and dogs following dietary exposure to bifenthrin.

CHRONIC EFFECTS FROM OVEREXPOSURE:
Imidacloprid Technical: In chronic dietary studies in rats and dogs exposed to imidacloprid, the target organs were the thyroids and/or liver.
Bifenthrin Technical: The principal effect observed in rats, mice and dogs from long-term exposure to bifenthrin was clinical signs of toxicity (e.g. tremors).
CARCINOGENICITY:
Imidacloprid Technical: In oncogenicity studies in rats and mice, imidacloprid was not considered carcinogenic in either species.
Bifenthrin Technical: Bifenthrin was not carcinogenic in a chronic feeding study in rats. In an oncogenicity study in mice, there was an increased incidence of tumors (urinary bladder, liver, lung). EPA classified bifenthrin as Group C (possible human carcinogen) chemical based on urinary bladder tumors in mice. The Agency used a non-linear methodology approach for determining the Margin of Exposure (MOE) for the estimation of cancer risk. Therefore, EPA has a reasonable certainty that no harm will result from exposure to residues of bifenthrin.

IARC: Not Listed **OSHA:** Not Listed
NTP: Not Listed **OTHER:** Not Listed

REPRODUCTIVE & DEVELOPMENTAL TOXICITY:
Imidacloprid Technical:
Reproduction: In a two-generation reproduction study in rats, imidacloprid was not a primary reproductive toxicant. Offspring exhibited reduced body weights at the high dose and in conjunction with maternal toxicity.
Developmental Toxicity: in developmental toxicity studies in rats and rabbits, there was no evidence of an embryonic or teratogenic potential for imidacloprid. In both species, developmental effects were observed only at high doses and in conjunction with maternal toxicity.
Bifenthrin Technical:
Reproduction: Bifenthrin is not a reproductive toxicant based on multigeneration reproduction study in rats.
Developmental Toxicity: Bifenthrin is not a developmental toxicant based on developmental toxicity studies in rats and rabbits.
NEUROTOXICITY:
Imidacloprid Technical: In acute and subchronic neurotoxicity screening studies in rats, imidacloprid produced slight neurobehavioral effects in each study at the highest dose tested. There were no correlating morphological changes observed in the neural tissues. In a one-generation developmental neurotoxicity screening study in rats, offspring exposed to imidacloprid showed decreased motor activities. These effects occurred at the highest dose tested and in conjunction with maternal toxicity. There were no correlating morphological changes observed in the neural tissue.
Bifenthrin Technical: Bifenthrin did not cause neurotoxicity in hens. In acute and subchronic neurotoxicity screening studies in rats, transient well-defined neurobehavioral effects were seen without correlating morphological changes in the neural tissues.
MUTAGENICITY:
Imidacloprid Technical: The imidacloprid mutagenicity studies, taken collectively, demonstrate that the active ingredient is not genotoxic or mutagenic.
Bifenthrin Technical: Bifenthrin is not considered genotoxic or mutagenic based on in vitro and in vivo mutagenicity studies.

XII. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: This product is extremely toxic to fish and other aquatic organisms. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Run-off from treated areas may be hazardous to aquatic organisms in neighboring areas.
ECOLOGICAL INFORMATION: This chemical demonstrates the properties and characteristics associated with chemicals detected in ground water. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in ground water contamination.

XIII. DISPOSAL CONSIDERATIONS

DISPOSAL METHODS:
Product: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.
Container: do not re-use empty containers. Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state and local authorities. If burned, stay out of smoke.

XIV. TRANSPORTATION INFORMATION:

DOT Transportation:
Not Regulated
Proper Shipping Name:
NA
Hazard Class:
NA
U.S. Surface Freight Class:
18 - Insecticides, Fungicides, Insect or Animal Repellent NOI

Marine Pollutant #1:
NA
HM 181 Shipping Name:
NA
ID NO.:
NA
Reportable Quantity (RQ):
NA

XV. REGULATORY INFORMATION – UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):
SEC 311/312:
Y Immediate (Acute Health)
N Delayed (Chronic Health)
N Fire
N Sudden Release of Pressure
N Reactivity

SEC 302 (Extremely Hazardous Substance): NA
SEC 304 (Emergency Release Notification): NA
SEC 313 (Toxic Chemicals): Bifenthrin Technical (CAS #82657-04-3; 1.0%)
CERCLA RQ: NA
CAA RQ: NA

EPA Registration No.: 432-1418-10404 (0.18 G); 432-1426-10404 (0.18 GC); 432-1417-10404 (0.225); 432-1427-10404 (0.225 GC)

NOTE: NA=Not Applicable; ND=Not Determined; NE=Not Established

Preparation and distribution of this Material Safety Data Sheet is done for LESCO, Inc., pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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