

**Product name:** SMARTFRESH™ ProTabs Yellow

**Issue Date:** 01/11/2016

**Print Date:** 06/23/2016

AGROFRESH INC. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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### 1. IDENTIFICATION

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**Product name:** SMARTFRESH™ ProTabs Yellow

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

**Identified uses:** Plant growth regulator.

#### COMPANY IDENTIFICATION

AGROFRESH INC.  
400 ARCOLA ROAD  
COLLEGEVILLE PA 19426-2914  
UNITED STATES

**Customer Information Number:**

866-206-1001  
FGLAGFR@AgroFresh.com

#### EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 800-424-9300

**Local Emergency Contact:** +1 6102446630

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### 2. HAZARDS IDENTIFICATION

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#### Hazard classification

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

#### Other hazards

No data available

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**Chemical nature:** Mixture of solid organic and inorganic compounds

This product is a mixture.

| Component            | CASRN     | Concentration |
|----------------------|-----------|---------------|
| 1-Methylcyclopropene | 3100-04-7 | 1.0 - 3.0 %   |

|                                  |            |               |
|----------------------------------|------------|---------------|
| alpha-Cyclodextrin               | 10016-20-3 | 40.0 - 45.0 % |
| Sodium Bicarbonate               | 144-55-8   | 40.0 - 45.0 % |
| Cellulose, 2-hydroxypropyl ether | 9004-64-2  | 1.0 - 2.0 %   |

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## 4. FIRST AID MEASURES

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### Description of first aid measures

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

**Skin contact:** 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. Suitable emergency safety shower facility should be available in work area.

**Eye contact:** Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice.

**Ingestion:** No emergency medical treatment necessary.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Use the following extinguishing media when fighting fires involving this material: Carbon dioxide (CO2) Dry powder Foam Water spray

**Unsuitable extinguishing media:** No data available

### Special hazards arising from the substance or mixture

**Hazardous combustion products:** No data available

**Unusual Fire and Explosion Hazards:** Combustion generates toxic fumes of the following: Carbon oxides

**Advice for firefighters**

**Fire Fighting Procedures:** Remain upwind. Avoid breathing smoke. Cool closed containers exposed to fire with water spray.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus and protective suit.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. If exposed to material during clean-up operations, see SECTION 4, First Aid Measures, for actions to follow.

**Environmental precautions:** CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

**Methods and materials for containment and cleaning up:** Keep spectators away. Transfer spilled material to suitable containers for recovery or disposal. Use mechanical handling equipment. See SECTION 13, Disposal Considerations, for information regarding the disposal of contained spills.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** Do not handle material near food, feed or drinking water.

**Conditions for safe storage:** Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store this material near food, feed or drinking water.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control parameters**

Exposure limits are listed below, if they exist.

| Component                        | Regulation | Type of listing | Value/Notation       |
|----------------------------------|------------|-----------------|----------------------|
| 1-Methylcyclopropene             | Dow IHG    | TWA             | 0.3 ppm              |
|                                  | Dow IHG    | C               | 1 ppm                |
| Sodium Bicarbonate               | Dow IHG    | TWA             | 10 mg/m <sup>3</sup> |
| Cellulose, 2-hydroxypropyl ether | Dow IHG    | TWA Total dust  | 10 mg/m <sup>3</sup> |

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Hygiene measures:** Handle in accordance with good industrial hygiene and safety practice.

**Protective measures:** Facilities storing or utilizing this material should be equipped with an eyewash facility. End users must follow label instructions when using this product.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields).

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"), Neoprene, Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

|   |                   |
|---|-------------------|
| <b>Physical state</b>                         | tablet            |
| <b>Color</b>                                  | yellow            |
| <b>Odor</b>                                   | No data available |
| <b>Odor Threshold</b>                         | No data available |
| <b>pH</b>                                     | 8                 |
| <b>Melting point/range</b>                    | No data available |
| <b>Freezing point</b>                         | No data available |
| <b>Boiling point (760 mmHg)</b>               | No data available |
| <b>Flash point</b>                            | No data available |
| <b>Evaporation Rate (Butyl Acetate = 1)</b>   | No data available |
| <b>Flammability (solid, gas)</b>              | No data available |
| <b>Lower explosion limit</b>                  | No data available |
| <b>Upper explosion limit</b>                  | No data available |
| <b>Vapor Pressure</b>                         | No data available |
| <b>Relative Vapor Density (air = 1)</b>       | Not applicable    |
| <b>Relative Density (water = 1)</b>           | No data available |
| <b>Water solubility</b>                       | No data available |
| <b>Partition coefficient: n-octanol/water</b> | No data available |
| <b>Auto-ignition temperature</b>              | No data available |

|                                  |  |
|----------------------------------|--|
| <b>Decomposition temperature</b> | During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition. |
| <b>Kinematic Viscosity</b>       | No data available  |
| <b>Explosive properties</b>      | No data available  |
| <b>Oxidizing properties</b>      | No data available  |
| <b>Molecular weight</b>          | No data available  |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No data available

**Chemical stability:** No data available

**Possibility of hazardous reactions:** This material is considered stable. Product will not undergo polymerization.

**Conditions to avoid:** Static discharge

**Incompatible materials:** Avoid contact with acids, alkalies and strong oxidizing agents.

**Hazardous decomposition products:** There are no known hazardous decomposition products for this material.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat, female, > 5,000 mg/kg

#### Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rat, male and female, > 5,000 mg/kg

#### Acute inhalation toxicity

No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 5.13 mg/l

**Skin corrosion/irritation**

Brief contact may cause skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight temporary eye irritation.  
Corneal injury is unlikely.

**Sensitization**

Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:  
No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

High doses of sodium bicarbonate caused bladder effects in rats; however, repeated ingestion of sodium bicarbonate by humans has not resulted in known significant adverse effects.

**Carcinogenicity**

For the component(s) tested: Did not cause cancer in laboratory animals.

**Teratogenicity**

For the component(s) tested: Did not cause birth defects or any other fetal effects in laboratory animals.

**Reproductive toxicity**

For the component(s) tested: In animal studies, did not interfere with reproduction.

**Mutagenicity**

For the component(s) tested: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Product test data not available.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**1-Methylcyclopropene**

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**alpha-Cyclodextrin**

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

**Sodium Bicarbonate**

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**Cellulose, 2-hydroxypropyl ether**

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

**Toxicity****Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

EC50, Oncorhynchus mykiss (rainbow trout), 48 Hour, > 190 mg/l

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 48 Hour, > 186 mg/l

**Acute toxicity to algae/aquatic plants**

ErC50, Pseudokirchneriella subcapitata (green algae), 96 Hour, > 239 mg/l

**Toxicity to Above Ground Organisms**

Material is practically non-toxic to birds on an acute basis (LD50 > 2000 mg/kg).

oral LD50, Colinus virginianus (Bobwhite quail), > 2250mg/kg bodyweight.

**Persistence and degradability****1-Methylcyclopropene**

**Biodegradability:** No relevant data found.

**alpha-Cyclodextrin**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

10-day Window: Pass

**Biodegradation:** 80 %

**Exposure time:** 28 d

**Method:** OECD Test Guideline 301F or Equivalent

**Sodium Bicarbonate**

**Biodegradability:** Biodegradation is not applicable.

**Cellulose, 2-hydroxypropyl ether**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential****1-Methylcyclopropene**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Partition coefficient: n-octanol/water(log Pow):** Pow: 2.03 estimated

**alpha-Cyclodextrin**

**Bioaccumulation:** Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

**Partition coefficient: n-octanol/water(log Pow):** <= 3

**Sodium Bicarbonate**

**Bioaccumulation:** Partitioning from water to n-octanol is not applicable.

**Cellulose, 2-hydroxypropyl ether**

**Bioaccumulation:** No data available.

**Mobility in soil**

**1-Methylcyclopropene**

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** 35 - 60 Estimated.

**alpha-Cyclodextrin**

No relevant data found.

**Sodium Bicarbonate**

Relevant data not available.

**Cellulose, 2-hydroxypropyl ether**

No data available.

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** For disposal, incinerate this material at a facility that complies with local, state, and federal regulations.

**Contaminated packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal.

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### 14. TRANSPORT INFORMATION

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**DOT**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

Not regulated for transport

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport



This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## 15. REGULATORY INFORMATION

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### OSHA Hazard Communication Standard

As supplied, this product is considered non-hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200). However, in contact with water, the product will release the active ingredient, 1-methylcyclopropene, which is classified as hazardous under the OSHA Hazard Communication Standard (29CFR 1910.1200).

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

This product is not a hazardous chemical under 29CFR 1910.1200, and therefore is not covered by Title III of SARA.

### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

### Pennsylvania

Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

### California (Proposition 65)

This product contains trace levels of a component or components known to the state of California to cause cancer:

| Components             | CASRN    |
|------------------------|----------|
| Dimethylvinyl chloride | 513-37-1 |
| Chloro-2-methylpropene | 563-47-3 |

### United States TSCA Inventory (TSCA)

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

### Federal Insecticide, Fungicide and Rodenticide Act

EPA Registration Number: 71297-10

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 slight eye irritation  
Harmful if absorbed through skin  
Harmful if inhaled  
Harmful if swallowed

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## 16. OTHER INFORMATION

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### Other information

The Material Safety Data Sheet (MSDS) augments the label and should not be used in place of regulatory approved product labels which are attached to or accompanying the product container. This MSDS provides important health, safety and environmental information for personnel that are manufacturing, distributing, transporting and storing the product, including emergency responders and other product handlers. The label provides information specifically for product users.

### Hazard Rating System

#### HMIS

| Health | Flammability | Physical Hazard |
|--------|--------------|-----------------|
| 1*     | 1            | 0               |

\* = Chronic Effects (See Hazards Identification)

### Revision

Identification Number: 101182182 / A456 / Issue Date: 01/11/2016 / Version: 5.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

### Legend

|         |                                  |
|---------|----------------------------------|
| C       | Ceiling limit                    |
| Dow IHG | Dow Industrial Hygiene Guideline |
| TWA     | Time weighted average            |

### Information Source and References

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

AGROFRESH INC. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and

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