



Please read the entire document. This Material Safety Data Sheet contains important environmental, health and toxicology information for your employees, and anyone who will use, transport, store, dispose of or handle this product. Please make sure this information is given to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this MSDS must be given to the buyer or the information contained herein must be incorporated in your MSDS.

**SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**

**PRODUCT NAME:** RAZE™ Herbicide  
**EPA REGISTRATION NUMBER(S):** 66330-405  
**SYNONYM(S):** ARY 0548-019

**COMPANY**

Arysta LifeScience North America, LLC  
15401 Weston Parkway, Suite 150  
Cary, NC 27513

**EMERGENCY TELEPHONE NUMBERS**

HEALTH EMERGENCY:	SPILL EMERGENCY:
1-866-303-6952, or 1-651-632-8946	1-800-424-9300, or 1-703-527-3887

**SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Active Ingredient(s)/ Hazardous Inert Ingredient(s)	CAS #	Exposure Limits*	% Weight	% Volume
Flucarbazono-Sodium: sodium 4,5-dihydro-3-methoxy- 4-methyl-5-oxo-N-([2- (trifluoromethoxy)phenyl]sulfonyl- 1H-1,2,4-triazole-1- carboximidate	181274-17-9	<b>TWA<sup>a</sup></b> OSHA PEL <sup>b</sup> : None ACGIH TLV <sup>c</sup> : None NIOSH REL <sup>d</sup> : None	3.50	NDA
Fluroxypyr 1-methylheptyl ester: 1-methylheptyl [(4-amino- 3,5-dichloro-6-fluoro-2- pyridinyl)oxy]acetate	81406-37-3	<b>TWA<sup>a</sup></b> OSHA PEL <sup>b</sup> : None ACGIH TLV <sup>c</sup> : None NIOSH REL <sup>d</sup> : None	26.28	NDA

Only the identities of the active ingredient(s) and any hazardous inert ingredients are listed. Specific information on all of this product's ingredients can be obtained by the treating medical professional or spill emergency responder for the management of exposures, spills, or safety assessments.

\*Source: *Guide to Occupational Exposure Values 2008*, published by ACGIH

<sup>a</sup>**TWA**: Time-weighted average exposure concentration for a conventional 8-hour (TLV, PEL) or up to a 10-hour (REL) workday and a 40-hour workweek.

<sup>b</sup>**OSHA PEL**: Occupational Safety and Health Administration Permissible Exposure Limits.

**EMERGENCY TELEPHONE #:** 1-866-303-6952 or 1-651-632-8946

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable

<sup>c</sup>**ACGIH TLV:** American Conference of Governmental Industrial Hygienists, Inc., Threshold Limit Values.

<sup>d</sup>**NIOSH REL:** National Institute for Occupational Safety and Health Recommended Exposure Limits.

<sup>e</sup>**ACGIH TLV:** American Conference of Governmental Industrial Hygienists, Inc., Threshold Limit Values.

<sup>f</sup>**NIOSH REL:** National Institute for Occupational Safety and Health Recommended Exposure Limits.

<sup>g</sup>**DFG MAK:** Federal Republic of Germany (DFG), Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area 2007 Maximum Concentration Values in the Workplace (MAKs).

### SECTION 3: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**CAUTION:**

- **CAUSES MODERATE EYE IRRITATION**
- **AVOID CONTACT WITH EYES, SKIN OR CLOTHING**
- **WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING**
- **WEAR PROTECTIVE EYEWEAR**
- **KEEP OUT OF REACH OF CHILDREN**

#### **Acute Health Hazards**

**Eye:** May cause slight eye irritation.

**Skin:** May cause moderate skin irritation. This substance is not a contact sensitizer.

**Ingestion:** Single dose oral toxicity is low.

**Inhalation:** Single dose inhalation toxicity is low.

**Chronic Health Hazards (Including Cancer):** Flucarbazone-sodium has shown no evidence of carcinogenicity in animal studies. Fluroxypyr is classified as a “not likely” human carcinogen.

**Teratology (Birth Defects) Information:** Flucarbazone-sodium is not a developmental toxicant. Fluroxypyr does not demonstrate developmental toxicity.

**Reproduction Information:** Flucarbazone-sodium is not a reproductive toxicant. Fluroxypyr does not demonstrate reproductive toxicity.

### SECTION 4: FIRST AID MEASURES

**Skin:** 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.

**Eyes:** Hold eye 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 eye. Call a poison control center or doctor for treatment advice.

**Ingestion:** Do not induce vomiting unless told to do so by the poison control center or doctor. Never give anything by mouth to an unconscious person. Immediately call a poison control center or doctor for treatment advice.

**EMERGENCY TELEPHONE #:** 1-866-303-6952 or 1-651-632-8946

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable

**Inhalation:** Move person to fresh air. If person is not breathing, call 9-1-1 or an ambulance and then give artificial respiration. If breathing is difficult, oxygen should be given by qualified personnel.

**NOTE TO PHYSICIAN:** May pose an aspiration pneumonia hazard. Probable mucosal damage may contraindicate the use of gastric lavage.

## SECTION 5: FIRE FIGHTING MEASURES

<b>Flammable Limits in Air (% by volume):</b>		
	<b>Upper:</b>	NDA
	<b>Lower:</b>	NDA
<b>Flash Point:</b>		>93°C
	<b>Method Used:</b>	Tag closed cup
<b>Autoignition Temperature:</b>		NDA
<b>LEL/UEL:</b>		NDA
<b>NFPA Hazard Classification:</b>		
	<b>Health:</b>	2
	<b>Flammability:</b>	1
	<b>Reactivity:</b>	0
	<b>Other:</b>	None
<b>Extinguishing Media:</b>		Foam, CO <sub>2</sub> , or dry chemical
<b>Special Fire Fighting Procedures:</b>		Foam fire-extinguishing system is preferred because uncontrolled water can spread possible contamination. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Read the entire document. Special Protective Equipment: Wear positive pressure self-contained breathing apparatus.
<b>Hazardous Combustion Products:</b>		Toxic irritating gases and fumes will be formed.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### EMERGENCY PHONE NUMBERS

**Exposure Calls (PROSAR): 1-866-303-6952 or 1-651-632-8946 (International)**

**Spill Calls (CHEMTREC): 1-800-424-9300 or 1-703-527-3887**

**SMALL SPILL:** Absorb small spills with dry material and discard in disposal container.

**LARGE SPILL:** Stop the leak, if possible. Ventilate the space involved. Construct a dike to prevent spreading. Prevent waterway contamination. Collect run-off water and transfer to drums or tanks for later disposal. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

For spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. Place in non-sparking containers for recovery or disposal. Remove from spill location. Flush area with water spray, and collect rinsate. If disposal is required then refer to Section 13 "Disposal" for instructions.

**SECTION 7: HANDLING AND STORAGE**

It is a violation of federal law to use this product in a manner inconsistent with its labeling. Read entire label. Use strictly in accordance with label precautionary statements and directions.

**HANDLING PROCEDURES: KEEP OUT OF REACH OF CHILDREN AND ANIMALS**

Personnel handling this product should be thoroughly trained as to its hazards. Do not ingest. Do not breathe vapors or mists. Avoid getting material on clothing. Use handling, storage and disposal procedures that will prevent contamination of water, food or feed.

**STORING PROCEDURES:** Do not store in or around home. Store unused product in a cool, ventilated, dry and locked area. Do not allow prolonged storage in areas with high temperature.

**WORK/HYGIENIC PROCEDURES:** 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: 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. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining Personal Protective Equipment (PPE). If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

**MIN/MAX STORAGE:** Min Temp: Not determined; Max Temp: Not determined.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Eye Protection:** Do not get this material in your eyes. The use of chemical safety eyewear is recommended when handling this material.

**Respiratory/Ventilation Requirements:** Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. If needed, use MSHA/NIOSH approved respirator for pesticides.

**Skin Protection:** Avoid skin contact by long-sleeved shirt and long pants, chemical resistant gloves (such as barrier laminate or Viton), and shoes plus socks. Remove contaminated clothing and wash before re-wearing.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Off-white to beige viscous liquid
<b>Odor:</b>	Odor characteristic of mild latex paint
<b>Physical State:</b>	Liquid
<b>pH:</b>	5.8 (1% suspension)
<b>Boiling Point:</b>	NDA
<b>Melting Point:</b>	NDA
<b>Freezing Point</b>	NDA
<b>Vapor Pressure:</b>	NDA
<b>Vapor Density:</b>	NDA
<b>Specific Gravity:</b>	1.10
<b>Evaporation Rate:</b>	NDA
<b>Solubility:</b>	NDA
<b>Percent Solids by Weight:</b>	NDA
<b>Percent Volatile:</b>	NDA
<b>Volatile Organic Compounds (VOC):</b>	NDA

**EMERGENCY TELEPHONE #: 1-866-303-6952 or 1-651-632-8946**

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable

<b>Molecular Weight:</b>	NDA
<b>Viscosity:</b>	NDA

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable
<b>Hazardous Polymerization:</b>	Will not occur
<b>Flash Point:</b>	>93°C
<b>Flammable Point:</b>	NDA
<b>Auto Ignition:</b>	NDA
<b>Incompatibility With Other Materials:</b>	Avoid contact with acids, bases, and oxidizing materials.
<b>Hazardous Decomposition Products:</b>	Normal combustion forms carbon dioxide and water vapor and may produce oxides of nitrogen.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute:

**Eye and Skin:** Minimally irritating to eyes (rabbits). Moderately irritating to the skin. Not a contact sensitizer.

**Dermal Toxicity:** The dermal LD<sub>50</sub> in rats is > 5 g/kg.

**Oral Toxicity:** The oral LD<sub>50</sub> in female rats is > 5 g/kg.

**Inhalation Toxicity:** The 4-hour LC<sub>50</sub> in rats is > 2.08 mg/L.

## SECTION 12: ECOLOGICAL INFORMATION

**Aquatic Organism Toxicity:** As with any pesticide, this product should be used according to label directions and should be kept out of streams, lakes and other aquatic habitats of concern.

The following information is based on the active ingredient, Flucarbazone-sodium technical.

Fish toxicity: LC<sub>50</sub> (96-hr) > 96.7 mg/L (Rainbow trout)  
LC<sub>50</sub> (96-hr) > 99.3 mg/L (Bluegill sunfish)

Invertebrate toxicity: EC<sub>50</sub> (48-hr) = 38.8 mg/L (Daphnia magna)  
EC<sub>50</sub> > 10,000 mg/L (bacteria)  
EC<sub>50</sub> (96-hr) = 6.4 mg/L (green algae)

**Avian Toxicity:** Flucarbazone-sodium is not toxic to birds.

Acute oral LD<sub>50</sub> (Bobwhite quail): > 2000 mg/kg

Subchronic oral LC<sub>50</sub>: > 4646 mg/kg (Bobwhite quail)  
> 4969 mg/kg (Mallard duck)

Reproductive toxicity NOEC: 1311 mg/kg (Bobwhite quail)  
223 mg/kg (Mallard duck)

**Other Non-Target Organisms:** Flucarbazone-sodium is not toxic to bees.

The acute LD<sub>50</sub> is > 445 µg/bee for oral and > 200 µg/bee for direct contact.

**EMERGENCY TELEPHONE #: 1-866-303-6952 or 1-651-632-8946**

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable

The following information is based on the active ingredient, Fluroxypyr-meptyl technical.

Fish toxicity:	LC <sub>50</sub> (96-hr) > solubility limit (Rainbow trout) LC <sub>50</sub> (96-hr) > solubility limit (Golden orfe)
Invertebrate toxicity:	EC <sub>50</sub> (48-hr) > solubility limit (Daphnia magna) EC <sub>50</sub> (96-hr) > solubility limit (green algae)

**Avian Toxicity:** Fluroxypyr-meptyl is not toxic to birds.

Acute oral LD<sub>50</sub> (Bobwhite quail): > 2000 mg/kg  
Acute oral LC<sub>50</sub> (Mallard duck): > 2000 mg/kg

**Other Non-Target Organisms:** Fluroxypyr-meptyl is not toxic to bees.

The acute LD<sub>50</sub> is > 100 µg/bee for oral and > 100 µg/bee for direct contact.

### SECTION 13: DISPOSAL CONSIDERATIONS

Check governmental regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

### SECTION 14: TRANSPORT INFORMATION

U.S. DOT INFORMATION :

For non-bulk shipments by all modes of transportation:  
This material is not regulated for transport.

### SECTION 15: REGULATORY INFORMATION

#### U.S Federal Regulations

**FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act):** All pesticides are governed under FIFRA. Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**CERCLA (Comprehensive Response Compensation, and Liability Act):** None

**OSHA (Occupational Safety and Health Administration):** NA

**RCRA Categorization:** None

**SARA Title III (SUPERFUND Amendments and Reauthorization Act):**

Section 302 (EHS) TPQ: NONE

Section 304 (EHS) RQ: NONE

Section 311/312 CATEGORIES	1.	Immediate (Acute) Health Effects; <b>YES</b>
	2.	Delayed (Chronic) Health Effect; <b>NO</b>
	3.	Fire Hazard; <b>NO</b>
	4.	Sudden Release of Pressure Hazard; <b>NO</b>
	5.	Reactivity Hazard; <b>NO</b>

**EMERGENCY TELEPHONE #: 1-866-303-6952 or 1-651-632-8946**

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable

**TSCA (Toxic Substance Control Act):** This product is exempt from TSCA Regulation under FIFRA Section 3 (2)(B)(ii) when used as a pesticide.

**State Regulations:** Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

## SECTION 16: OTHER INFORMATION

<b>Reason for issue:</b>	Added EPA Registration Number (Section 1)
<b>Prepared by:</b>	Ashley R. Brown
<b>Issue date:</b>	3/09/11
<b>Supersedes date:</b>	7/16/10
<b>MSDS number:</b>	00461

The information in this MSDS is based on data available to us as of the issue date given herein, and believed to be correct. Contact Arysta LifeScience North America LLC at (919) 678-4900 to determine if additional data and information have become available since the issue date.

Judgments as to the suitability of information herein for the individual's own use or purposes are necessarily the individual's own responsibility. Although reasonable care has been taken in the preparation of such information, Arysta LifeScience North America LLC extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to the individual's purposes or the consequences of its use.

**EMERGENCY TELEPHONE #: 1-866-303-6952 or 1-651-632-8946**

MSDS Number: 00461

Issue Date: 03/09/11

NDA - No Data Available

NA - Not Applicable