



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 WHMIS. 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:** Pre-Pare® 70 WDG  
**PMRA REGISTRATION NUMBER(S):** 29500  
**SYNONYM(S):** Pre-Pare® 70% Water Dispersible Granular Herbicide

<u>COMPANY</u>	<u>EMERGENCY TELEPHONE NUMBERS</u>	
Arysta LifeScience North America, LLC 15401 Weston Parkway, Suite 150 Cary, NC 27513	HEALTH EMERGENCY: <b>1-866-303-6952, or 1-651-632-8946</b>	SPILL EMERGENCY: <b>1-800-424-9300, or 1-703-527-3887</b>

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

Active Ingredient(s)/ Hazardous Inert Ingredient(s)	CAS #	Exposure Limits*	% Weight	% Volume
Flucarbazone-sodium Technical [4,5-Dihydro-3-methoxy-4-methyl-5-oxo-N-((2-(trifluoromethoxy)phenyl)sulfonyl)-1H-1,2,4-triazole-1-carboxamide, sodium salt]	181274-17-9	<u>TWA</u> <sup>a</sup> OSHA PEL <sup>b</sup> : None ACGIH TLV <sup>c</sup> : None NIOSH REL <sup>d</sup> : None	70	NA

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.

<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.

**SECTION 3: HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**

**CAUTION:**

- **MAY CAUSE EYE IRRITATION**
- **DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING**
- **KEEP OUT OF REACH OF CHILDREN**

**Acute Health Hazards**

**Eye:** This product is moderately irritating to the conjunctiva and iris of the eyes. Symptoms of irritation were cleared within 24 hours post-treatment.

**Skin:** This product does not cause skin irritation. This product is not a skin sensitizer.

**Ingestion:** Not harmful by ingestion under normal handling operations.

**Inhalation:** Not harmful by inhalation under normal handling operations.

**Chronic Health Hazards (Including Cancer):** No evidence of carcinogenicity based on long-term animal studies. This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.

**Reproductive and Developmental Toxicity:** No evidence of reproductive and developmental toxicity based on animal studies.

**SECTION 4: FIRST AID MEASURES**

**Eyes:** Hold eyelids 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.

**Skin:** Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

**Inhalation:** First, remove victim to fresh air or uncontaminated area. If not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth. Call a poison control center or doctor for treatment advice.

**Ingestion:** If ingestion is suspected, call a physician or poison control center immediately for treatment advice. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger, or, if available, by administering syrup of ipecac. If syrup of ipecac is available, administer 1 tablespoonful (15 ml) of syrup of ipecac followed by 1 to 2 glasses of water. If vomiting does not occur within 20 minutes, repeat the dose once. Do not induce vomiting or give anything by mouth to an unconscious person.

**Notes to Physician:** Treat symptomatically.

## 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>		
		NA
	<b>Method Used:</b>	NA
<b>Autoignition Temperature:</b>		
		NDA
<b>LEL/UEL:</b>		
		NDA
<b>NFPA Hazard Classification:</b>		
	<b>Health:</b>	1
	<b>Flammability:</b>	0
	<b>Reactivity:</b>	0
	<b>Other:</b>	NA
<b>Extinguishing Media:</b>		
		Water, CO <sub>2</sub> , dry chemical, foam
<b>Special Fire Fighting Procedures:</b>		
		Keep out of smoke, cool exposed containers with water spray. Fight fire from upwind position. Use SCBA. Contain run-off to prevent entry into sewers or waterways. Equipment used in fires may become contaminated.
<b>Hazardous Combustion Products:</b>		
		NDA

## 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**

Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). 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.

## SECTION 7: HANDLING AND STORAGE

Store in a cool, dry and well-ventilated area away from heat sources. Store in an area designated specifically for pesticides. Do not store near any material intended for use or consumption by humans or animals. Storage temperature minimum is 32°F/0°C 30-day average and not to exceed a maximum of 100°F/38°C. The shelf life is time and temperature dependent.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Eye Protection:** Goggles should be used when needed to prevent material from getting into the eyes. Clean water should be available for washing in case of eye contamination.

**Skin Protection:** Chemical-resistant gloves such as nitrile. Wear long sleeves and trousers to prevent skin contact. Clean water should be available for washing in case of skin contamination. Launder clothes after use. Wash thoroughly after handling.

**Respiratory/Ventilation Requirements:** Control exposure levels through the use of general and local exhaust ventilation where needed. When needed, based on conditions of use, wear a NIOSH-approved particulate respirator.

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

MSDS Number: 00455

Issue Date: 12/17/09

NDA = No Data Available

NA = Not Applicable

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Appearance:</b>	Free flowing granule, tan
<b>Odor:</b>	Slight musty odor
<b>Physical State:</b>	Solid
<b>pH:</b>	NA
<b>Boiling Point:</b>	NA
<b>Melting Point:</b>	NA
<b>Freezing Point:</b>	NA
<b>Vapor Pressure:</b>	1 x 10e <sup>-10</sup> mm Hg @ 20°C (for flucarbazone-sodium)
<b>Vapor Density:</b>	NA
<b>Bulk Density:</b>	33-35 lb/cubic foot
<b>Specific Gravity:</b>	NA
<b>Evaporation Rate:</b>	NA
<b>Solubility in Water:</b>	3.1% (w/w) for flucarbazone-sodium
<b>Percent Solids by Weight:</b>	NA
<b>Percent Volatile:</b>	NA
<b>Volatile Organic Compounds:</b>	NA
<b>Molecular Weight:</b>	418.3 (for flucarbazone-sodium)
<b>Viscosity:</b>	NA

## SECTION 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	This is a stable material.
<b>Hazardous Polymerization:</b>	Will not occur.
<b>Flash Point:</b>	NA
<b>Flammable Point:</b>	NDA
<b>Auto Ignition:</b>	NDA
<b>Incompatibility With Other Materials:</b>	NDA
<b>Decomposition Products:</b>	NDA

## SECTION 11: TOXICOLOGICAL INFORMATION

### Acute (Product Specific Information)

**Oral Toxicity:** The oral LD<sub>50</sub> of this product in male and female rats is > 5,000 mg/kg.

**Dermal Toxicity:** The dermal LD<sub>50</sub> of this product in male and female rats is > 2,000 mg/kg.

**Inhalation Toxicity:** The 4 hour inhalation LC<sub>50</sub> (dust) of this product in rats is > 5.113 mg/L.

**Eye Irritation:** This product is a moderate irritant to the cornea and iris (rabbit). Irritation cleared within 24 hours post-treatment.

**Skin Irritation:** This product is not a dermal irritant (rabbit).

**Skin Sensitization:** This product is not a dermal sensitizer (guinea pig).

(The following information pertains to the active ingredient, flucarbazone-sodium technical.)

**Subchronic:** In a subacute dermal study, rats were exposed to technical at 1,000 mg/kg for 6 hr/day for 22 applications. No systemic effects were observed in the treated animals. Subacute studies were conducted in rats and mice to investigate the immunotoxicological potential of technical. Rats were treated by oral gavage for 2 weeks at doses of 100, 300, 600, 1000 or 2500 mg/kg. Mice were administered dietary concentrations of 30, 100 or 1000 ppm for 2 weeks. No treatment-related adverse immunotoxic

effects were determined at the end of the study in either species. The NOELs for overall toxicity were 300 mg/kg and 1000 ppm, for rats and mice, respectively.

In a 28-day subacute feeding study, technical was administered to rats at dietary concentrations of 100, 250, 2500 or 10000 ppm. The NOEL was 250 ppm based on immunotoxic effects (decreased splenic cell counts, increased macrophage activation and decreased IgA titers). In a Plaque-forming-cell assay conducted to investigate the immunotoxicological potential of technical, rats were administered dietary concentrations of 1000, 5000 or 20000 ppm for 4 weeks. A special function immunotoxicological test was performed at the end of exposure. There were no treatment-related findings observed at dietary levels up to and including 20000 ppm. The NOEL in the Plaque-forming-cell assay was 20000 ppm, the highest dose tested.

Subchronic (90 day) feeding studies were conducted on technical using mice, rats, and dogs at maximum doses of 7000, 20000, and 50000 ppm, respectively. No treatment-related findings were observed in mice at dietary levels up to and including the highest dose tested. In rats, effects observed included clinical signs of toxicity, changes in clinical chemistries, immunologic changes, reduced spleen weights and histopathological findings in the forestomach. The immunologic changes were completely or largely reversible with only minimal changes observed at the end of a 5-week recovery period. When dogs were administered technical, effects observed included changes in clinical chemistries, hematological changes, red discoloration of the gastric mucosa at necropsy, increased liver and adrenal weights, and histopathological findings (stomach, liver, kidney, adrenals). The overall NOELs established in these studies were 7000 ppm for mice, 250 ppm for rats, and 1000 ppm for dogs.

**Chronic Toxicity:** Dogs were administered flucarbazono-sodium at dietary concentrations of 200, 1000 or 5000 ppm for 1 year. Effects observed in the study included decreased body weights, increased levels of ALAT, ASAT, GLDH, and N-Demethylase, transient decreased levels of thyroxine (T4), and increased liver weights. The decrease in T4 levels was most likely related to an increased hepatic clearance and not a primary effect on the thyroid. This was based on the absence of effects on the other thyroid biomarkers, the slightly increased N-Demethylase levels, and the increased liver weights. The overall NOEL in the dog was 200 ppm. In a 2-year study, rats were administered flucarbazono-sodium via the diet. The mean daily intake per kg body weight was adjusted on a weekly basis to achieve a daily exposure of 2.5, 7.5, 125 or 1000 mg/kg. Effects observed at the end of the study included decreased body weights, increased food consumption, and an increased incidence of some gross- and histopathological-findings observed in the stomach. The NOEL in the rat was 125 mg/kg.

**Carcinogenicity:** Flucarbazono-sodium was investigated for carcinogenicity in chronic feeding studies using rats and mice at maximum levels of 1000 mg/kg and 7000 ppm, respectively. There was no evidence of a carcinogenic potential observed in either species.

**Mutagenicity:** The results of in vitro and in vivo mutagenicity studies on flucarbazono-sodium are all negative.

**Developmental Toxicity:** In a developmental toxicity study in rats, flucarbazono-sodium was administered by oral gavage during gestation at doses of 100, 300 or 1000 mg/kg. Flucarbazono-sodium did not induce any maternal or developmental toxicity at doses up to and including 1000 mg/kg, the limit dose. The NOEL for maternal and developmental toxicity in the rat was 1000 mg/kg. In a developmental toxicity study in rabbits, technical was administered by oral gavage during gestation at doses of 100, 300, 500, or 1000 mg/kg. Developmental effects such as abortions, decreased fetal weights, and delayed skeletal ossification occurred in correlation with systemic maternal toxicity. The NOEL for both maternal and developmental toxicity in the rabbit was 100 mg/kg.

**Reproduction:** In a reproduction study, flucarbazono-sodium was administered to rats for 2 generations at dietary concentrations of 50, 4000 or 20000/12000 ppm. The high dose was reduced to 12000 ppm after five weeks due to a sharp increase in food intake that resulted in unphysiologically high feces excretion and water consumption accompanied by diarrhea. Other parental toxicity included decreased body weights, decreased organ weights (liver, uterus, spleen), and an increased incidence of caecal dilatations. Effects observed in the offspring included decreased pup weights, decreased liver weights and an increased incidence of a marbled liver surface and air-filled stomachs in pups necropsied at culling. The overall parental NOEL was 50 ppm. The NOEL for reproductive toxicity was 4000 ppm.

**Neurotoxicity:** In an acute neurotoxicity screening study using rats, flucarbazono-sodium was administered as a single oral dose at levels of 125, 500 or 2000 mg/kg. Transient clinical signs of toxicity and neurobehavioral effects were observed at the high dose without correlating micropathological findings. The NOEL for microscopic lesions was 2000 mg/kg, the highest dose tested. The NOEL for overall toxicity was 500 mg/kg. In a 13-week neurotoxicity screening study, flucarbazono-sodium was administered to rats at dietary concentrations of 250, 2000 or 20000 ppm. Body weight and food consumption was reduced at the high-dose level. Functional observational battery (FOB) and automated measures of motor and locomotor activity were not affected by treatment. There were no treatment-related microscopic lesions in neural tissues or skeletal muscle in any of the treated animals. There was no evidence of neurotoxicity at any dietary level. The NOEL for microscopic lesions was 20000 ppm, the highest dose tested. The NOEL for overall toxicity was 2000 ppm.

## SECTION 12: ECOLOGICAL INFORMATION

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

**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.

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) IC <sub>50</sub> (96-hr) = 6.4 mg/L (green algae)

**Avian Toxicity:** Flucarbazono-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:** Flucarbazono-sodium is not toxic to bees.

The acute LD<sub>50</sub> is > 445µg/bee for oral and > 200 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. Incineration is the preferred method of disposal. Do not reuse container.

### SECTION 14: TRANSPORT INFORMATION

<b>D.O.T. Shipping Name:</b>	(pesticide, non-regulated)
<b>Technical Shipping Name:</b>	Flucarbazone-sodium
<b>Packing Group:</b>	NA
<b>D.O.T. Hazard Class:</b>	NA
<b>U.N/N.A. Number:</b>	NA
<b>Product RQ (lbs):</b>	NA
<b>D.O.T. Label:</b>	NA
<b>D.O.T. Placard:</b>	NA
<b>Marine Pollutant:</b>	No
<b>IMO :</b>	
<b>IMO Label:</b>	Non-Regulated
<b>IMO Placard:</b>	Not regulated
<b>European Road/Rail:</b>	
<b>Class:</b>	Not regulated

### SECTION 15: REGULATORY INFORMATION

This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

### SECTION 16: OTHER INFORMATION

<b>Reason for issue:</b>	New MSDS
<b>Prepared by:</b>	Ashley R. Brown
<b>Issue date:</b>	12/17/09
<b>Supersedes date:</b>	NA
<b>MSDS number:</b>	00455

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.

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