



Material Safety Data Sheet

AUTUMN™ SUPER 51 WDG HERBICIDE

MSDS Number: 102000022412
 MSDS Version 1.0
 Revision Date: 09/09/2011
 Print Date: 09/09/2011

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product name AUTUMN™ SUPER 51 WDG HERBICIDE
MSDS Number 102000022412
Product code (UVP) 79653794
EPA Registration No. 264-1134
Product Use Herbicide

Bayer CropScience
 2 T.W. Alexander Drive
 Research Triangle PK, NC 27709
 USA

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-866-99BAYER (1-866-992-2937)

SECTION 2. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Harmful if swallowed or absorbed through skin. Causes eye irritation. Avoid contact with skin, eyes and clothing.

Physical State dry, free flowing, water dispersible granules

Odor characteristic

Appearance light brown

Exposure routes Ingestion, Skin Absorption

Immediate Effects

Eye Moderate eye irritation. Avoid contact with eyes.

Skin Harmful if absorbed through skin. Avoid contact with skin, eyes and clothing.

Ingestion Harmful if swallowed. Do not take internally.

Potential Environmental Effect This product may cause adverse effects on non-target plants.



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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Component Name</u>	<u>CAS-No.</u>	<u>Average % by Weight</u>
Thiocarbazono-methyl	317815-83-1	45.00
Iodosulfuron-methyl-sodium	144550-36-7	6.00
Sulphonated aromatic polymer, sodium salt		15.00
Quartz (Silica, Crystalline)	14808-60-7	0.53
Crystalline quartz (respirable)		

SECTION 4. FIRST AID MEASURES

General	<p>Move out of dangerous area. Place and transport victim in stable position (lying sideways). Remove contaminated clothing immediately and dispose of safely.</p> <p>When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.</p>
Eye	<p>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 physician or poison control center immediately.</p>
Skin	<p>Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.</p>
Ingestion	<p>Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.</p>
Inhalation	<p>Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.</p>
Notes to physician Treatment	<p>Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.</p>

SECTION 5. FIRE FIGHTING MEASURES

Flash point	not applicable
Autoignition temperature	no data available
Lower Flammability Limit	no data available



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Upper Flammability Limit	no data available
Explosiveness	Not explosive 92/69/EEC, A.14 / OECD 113
Fire and Explosion Hazards	In the event of fire the following may be released: Hydrogen cyanide (hydrocyanic acid) Carbon monoxide (CO) Hydrogen iodide (HI) hydrogen sulphide (H ₂ S) nitrogen oxides (NO _x)
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	High volume water jet
Fire Fighting Instructions	Extinguishing measures to suit surroundings. Fight fire from upwind position. Keep out of smoke. Do not allow run-off from fire fighting to enter drains or water courses. Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective equipment. Avoid contact with spilled product or contaminated surfaces.
Methods for cleaning up	Use mechanical handling equipment. Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.
Additional advice	Information regarding safe handling, see section 7. Information regarding personal protective equipment, see section 8. Information regarding waste disposal, see section 13.

SECTION 7. HANDLING AND STORAGE

Handling procedures	Use only in area provided with appropriate exhaust ventilation. No special precautions required.
Storing Procedures	Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Keep away from direct sunlight.



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Work/Hygienic Procedures

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection

Follow all label instructions. Train employees in safe use of the product. Use only in area provided with appropriate exhaust ventilation.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Eye/Face Protection

Safety glasses with side-shields

Hand protection

Chemical resistant nitrile rubber gloves

Body Protection

Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

Iodosulfuron-methyl-sodium	144550-36-7	OES BCS*	TWA	1 mg/m3	
Quartz (Silica, Crystalline)	14808-60-7	ACGIH	TWA	0.025 mg/m3	
			NIOSH	REL	0.05 mg/m3
			OSHA Z1A	TWA	0.1 mg/m3
		Z3	TWA	2.4 millions of particles per cubic foot of air	
		Z3	TWA	0.1 mg/m3	
		Z3	TWA	0.3 mg/m3	
		US CA OEL	TWA PEL	0.1 mg/m3	
		US CA OEL	TWA PEL	0.3 mg/m3	
		TX ESL	ST ESL	1 ug/m3	
		TX ESL	ST ESL	1 ug/m3	
		TX ESL	AN ESL	0.1 ug/m3	
		TX ESL	AN ESL	0.1 ug/m3	
		TX ESL	ST ESL	10 ug/m3	
TX ESL	AN ESL	1 ug/m3			
		TWA	0.1 mg/m3		



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*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	light brown
Physical State	dry, free flowing, water dispersible granules
Odor	characteristic
pH	9.0 - 10.0 (1 %) at 23 °C
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Bulk density	695 - 725 kg/m3
Evaporation rate	no data available
Boiling Point	not applicable
Melting / Freezing Point	no data available
Water solubility	dispersible
Minimum Ignition Energy	no data available
Partition coefficient: n-octanol/water	no data available
Viscosity	no data available

SECTION 10. STABILITY AND REACTIVITY

Hazardous reactions	No dangerous reaction known under conditions of normal use.
Chemical Stability	Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredients, iodosulfuron-methyl sodium and thiencazuron-methyl.



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Acute oral toxicity	rat: > 2,000 mg/kg
Acute dermal toxicity	LD50: > 2,000 mg/kg
Acute inhalation toxicity	rat: LC50: > 5.0 mg/l Exposure time: 4 h
Skin irritation	rabbit: No skin irritation
Eye irritation	rabbit: Irritating to eyes.
Sensitisation	mouse: Non-sensitizing. OECD Test Guideline 429, local lymph node assay (LLNA)
Chronic toxicity	Iodosulfuron-methyl-sodium caused body weight changes in rats and minimal to moderate hematopoietic hyperplasia and increased cholesterol in dogs. Thiencarbazone-methyl caused urinary tract irritation in long term studies in mice, rats and dogs.

Assessment Carcinogenicity

Iodosulfuron-methyl-sodium was not carcinogenic in lifetime feeding studies in rats and mice.

Thiencarbazone-methyl was not carcinogenic in a lifetime feeding study in rats. In a lifetime feeding study in mice, there was a low incidence of urinary bladder tumors at high doses secondary to the chronic irritation due to the presence of bladder stones. Thiencarbazone-methyl was considered not to be directly carcinogenic in mice.

ACGIH

Quartz (Silica, Crystalline)	14808-60-7	Group A2
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NTP

Crystalline quartz (respirable)

IARC

Quartz (Silica, Crystalline)	14808-60-7	Overall evaluation: 1
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OSHA

None.

Reproductive toxicity

REPRODUCTION:

Iodosulfuron-methyl-sodium was not a reproductive toxicant at non-maternally toxic dose levels in a multi-generation study in rats.

Thiencarbazone-methyl was not a reproductive toxicant in a two-generation study in rats. Thiencarbazone-methyl caused toxicity in offspring at doses producing systemic toxicity in adult rats.

DEVELOPMENTAL TOXICITY:

Iodosulfuron-methyl-sodium is not a primary developmental toxicant in laboratory animals. Slight developmental effects were observed in conjunction with maternal toxicity only at the limit dose (1000 mg/kg) in rats.



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Thiencarbazone-methyl was not a primary developmental toxicant in rats and rabbits. Developmental effects were observed but were considered secondary to maternal toxicity.

Assessment neurotoxicity

Iodosulfuron-methyl-sodium did not demonstrate the potential to cause neurotoxicity in standard toxicity studies using laboratory animals.

Thiencarbazone-methyl was not a neurotoxicant in acute and subchronic neurotoxicity screening studies in rats.

Mutagenicity

Iodosulfuron-methyl-sodium is not considered genotoxic based on in vitro and in vivo tests.

Thiencarbazone-methyl was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity to fish

Rainbow trout (*Oncorhynchus mykiss*)
LC50: > 104 mg/l
Exposure time: 96 h
The value mentioned relates to the active ingredient thiencarbazone-methyl.

Toxicity to aquatic plants

Pseudokirchneriella subcapitata
Growth rate
IC50: 1.017 mg/l
Exposure time: 72 h
The value mentioned relates to the active ingredient thiencarbazone-methyl.

Lemna gibba (duckweed)
Growth rate
IC50: 0.00131 mg/l
Exposure time: 7 d
The value mentioned relates to the active ingredient thiencarbazone-methyl.

Acute Toxicity to Aquatic Invertebrates

Water flea (*Daphnia magna*)
EC50: > 98.6 mg/l
Exposure time: 48 h
The value mentioned relates to the active ingredient thiencarbazone-methyl.

Environmental precautions

Do not allow to get into surface water, drains and ground water.

Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Do not apply when weather conditions favor runoff or drift.



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SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance	Dispose in accordance with all local, state/provincial and federal regulations. Follow advice on product label and/or leaflet. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.
Container Disposal	Do not re-use empty containers. Triple rinse 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/provincial and local authorities. If burned, stay out of smoke.
RCRA Information	Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14. TRANSPORT INFORMATION

49CFR	Not dangerous goods / not hazardous material
IMDG	
UN-Number	3077
Class	9
Packaging group	III
Marine pollutant	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL MIXTURE)
IATA	
UN-Number	3077
Class	9
Packaging group	III
Environm. Hazardous Mark	YES
Description of the goods	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (THIENCARBAZONE-METHYL MIXTURE)

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

SECTION 15. REGULATORY INFORMATION

EPA Registration No. 264-1134



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US Federal Regulations

TSCA list

Sulphonated aromatic polymer, sodium salt
Quartz (Silica, Crystalline) 14808-60-7

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

None.

US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.
Crystalline quartz (respirable)

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Quartz (Silica, Crystalline) 14808-60-7 IL, MA

Canadian Regulations

Canadian Domestic Substance List

Sulphonated aromatic polymer, sodium salt
Quartz (Silica, Crystalline) 14808-60-7

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Quartz (Silica, Crystalline) 14808-60-7

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 2 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard



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Reason for Revision: New Material Safety Data Sheet.

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