SAFETY DATA SHEET

1. Identification

Product identifier	**Scepter T&O 70 WDG Herbicide**
Other means of identification	
SDS number	561_v1.0
Synonym(s)	Imazaquin
Recommended use	Herbicide. For use on established lawns of bermuda grass, St. Augustine grass, Centipede grass, and Zoysia grass. For use on golf courses, sod farms, commercial and residential turf, and for use around selected landscape ornamentals.
Recommended restrictions	No other uses are advised. Keep out of the Reach of Children!
EPA Registration number	EPA: 5481-613

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	AMVAC Chemical Corporation	
Address	4100 E Washington Blvd Los Angeles, CA 90023 USA	
Telephone	AMVAC Chemical Corp	323-264-3910
	AMVAC Chemical Corp	323-268-1028 (FAX)
Website	www.Amvac-Chemical.com	
E-mail	CustServ@Amvac-Chemical.com	
Emergency phone number	Medical	888-681-4261
	CHEMTREC® (USA+Canada)	800-424-9300
	Product Use	888-462-6822
	CHEMTREC® (Outside USA)	+1-703-527-3887

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Combustible dust
Label elements	
Hazard symbol	None.
Signal word	This product does not require a hazard warning label in accordance with GHS criteria.
Hazard statement	Not available.
Precautionary statement	
Prevention	Avoid release to the environment.
Response	Collect spillage.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Very toxic to aquatic life.
Supplemental information	This product is not combustible in the form in which it is shipped by the manufacturer, but may form a combustible dust through downstream activities (e.g. grinding, pulverizing) that reduce its particle size.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Imazaquin	2-(4,5-Dihydro-4-methyl-4-(1-methylethyl) -5-oxo-1H-imidazol-2-yl)-3-quinoline carboxylic acid	81335-37-7	70
Kaolin		1332-58-7	15.0 - 25.0 %

Additional components

Chemical name	Common name and synonyms	CAS number	%
free respirable Crystalline (quartz) Silica		14808-60-7	>= 0.1
Titanium Dioxide		1317-70-0	>= 0.1

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water.

Eye contact Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Drink plenty of water. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed No significant reaction of the human body to the product is known.

Indication of immediate medical attention and special treatment needed Treat symptomatically.

General information Take off all contaminated clothing immediately. If you feel unwell, seek medical advice (show the label where possible).

5. Fire-fighting measures

Suitable extinguishing media Foam. Dry chemical powder. Carbon dioxide (CO2). Water spray.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Move containers from fire area if you can do so without risk. Dike and collect extinguishing water. Evacuate area of all unnecessary personnel.. Do not allow contaminated water to enter drains or waterways. Dusty conditions may ignite explosively in the presence of an ignition source, causing a flash fire.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up Dike the spilled material, where this is possible. Prevent product from entering drains. Shovel up and place in a container for salvage or disposal. Spilled substance should be recovered whenever possible and applied according to label rates. Following product recovery, decontaminate the surface and flush area with water. Collect any wash water for approved disposal. For waste disposal, see section 13 of the SDS.

Environmental precautions Do not discharge into the subsoil/soil. Do not discharge into drains, water courses or onto the ground. Contain contaminated water/firefighting water.

7. Handling and storage

Precautions for safe handling

Pesticide Applicators & Workers: Refer to the Product Label for Handling Instructions.

Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Provide adequate ventilation. Wear appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid dust formation. Keep away from sources of ignition - No smoking. Ground container and transfer equipment to eliminate static electric sparks. Handle and open container with care. Avoid release to the environment. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Prevent contamination with other crop protection products, fertilizers, food, and feed. Store in tightly closed original container in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Do not store at temperatures above 40°C (104°F).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Additional components	**Type**	**Value**	**Form**
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	PEL	0.05 mg/m3	
Titanium Dioxide (CAS 1317-70-0)	PEL	15 mg/m3	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Additional components	**Type**	**Value**	**Form**
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	TWA	2 mg/m3	Respirable fraction.
Additional components	**Type**	**Value**	**Form**
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Titanium Dioxide (CAS 1317-70-0)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Kaolin (CAS 1332-58-7)	TWA	5 mg/m3	Respirable.
		10 mg/m3	Total
Additional components	**Type**	**Value**	**Form**
free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Individual protection measures, such as personal protective equipment

Eye/face protection	If contact is likely, safety glasses with side shields are recommended.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment.
Thermal hazards	Not available.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Solid.
Form	Dry flowable water dispersible granules.
Color	Off-white to beige.
Odor	Faint odor; Nutty
Odor threshold	Not available.
pH	3 - 5 (0.1%(m), approx 20°C)
Melting point/freezing point	426.2 - 431.6 °F (219 - 222 °C) (a.i.) / 426 °F (219 °C) estimated
Initial boiling point and boiling range	Has not been tested
Flash point	Not applicable (solid
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	No hazard is expected as long as the product is used appropriately and in accordance with the intended use.
Explosive limit - upper (%)	No hazard is expected as long as the product is used appropriatedly and in accordance with the intended use.
Vapor pressure	Negligible
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Dispersible
Partition coefficient (n-octanol/water)	0.93 (imazaquin)
Auto-ignition temperature	> 572 °F (> 300 °C) (Imazaquin)
Decomposition temperature	383 °F (195 °C) (Imazaquin)
Viscosity	Not available.
Other information	
Bulk density	481 - 609 kg/m³ (approx) 4.67 lb/gal (US, approx)

Chemical family	Imidazole derivative
Dust explosion properties	
Kst	< 200 bar.m/s
St class	1
Explosive properties	Not explosive.
Flammability	Based on the structure or composition there is no indication of flammability
Oxidizing properties	Not oxidizing.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid conditions which create dust. Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the decomposition temperature. Avoid electro-static discharge. Avoid high temperatures. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents., Strong acids., Strong bases.
Hazardous decomposition products	No hazardous decomposition products are known. Emits hazardous fumes and smoke of unknown composition when heated to decomposition or burned.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity Virtually nontoxic after single ingestion. Slightly toxic after short-term skin contact. Relatively nontoxic after short-term inhalation.

Product	Species	Test Results
Scepter T&O		
Acute		
Dermal		
Solid		
LD50	Rabbit	> 2000 mg/kg
Inhalation		
Dust		
LC50	Rat	> 5.7 mg/l, 4 h (Imazaquin only)
Oral		
Solid		
LD50	Rat	> 6598 mg/kg (male/female)

Skin corrosion/irritation Prolonged skin contact may cause temporary irritation.

Irritation Corrosion - Skin

Scepter T&O	Result: Minimally irritating Species: Rabbit Organ: skin

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Irritation Corrosion - Eye

Scepter T&O	Result: Slightly irritating Species: Rabbit Organ: eye

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitization This product is not expected to cause skin sensitization.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity

IARC Monographs. Overall Evaluation of Carcinogenicity

free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	1 Carcinogenic to humans.
Titanium Dioxide (CAS 1317-70-0)	2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	Known To Be Human Carcinogen.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not an aspiration hazard.

Chronic effects Prolonged inhalation may be harmful. This product may contain greater than 0.1% crystalline silica. Repeated exposure to high concentrations of crystalline silica may result in silicosis, a disease characterized by coughing, difficult breathing, wheezing, scarring of the lungs, and repeated, non-specific chest illnesses.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects.

Product		Species	Test Results
Scepter T&O			
Acute			
Other	EC50	Selenastrum capricornutum (new name Pseudokirchnerella subca	101.6 mg/l, 96 h
Aquatic			
Acute			
Crustacea	EC50	Daphnia	316 mg/l, 48 h
Fish	LC50	Pimephales promelas	127 mg/l, 96 h

Components		Species	Test Results
Imazaquin (CAS 81335-37-7)			
Aquatic			
Acute			
Other	EC50	Lemna gibba (fronds)	0.034 mg/l, 14 d
	NOEC	Lemna gibba (fronds)	0.0136 mg/l, 14 d

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential No data available.

Partition coefficient n-octanol / water (log Kow)

Scepter T&O	0.93, (imazaquin)

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal methods/information).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARD TO HUMANS

CAUTION!
Causes eye irritation. Avoid contact with eyes, skin, and clothing. Harmful if absorbed through skin.

ENVIRONMENTAL HAZARDS
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.
Do not contaminate water when disposing of equipment washwaters.
This chemical demonstrates the properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly when the water table is shallow, may result in groundwater contamination.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

free respirable Crystalline (quartz) Silica (CAS 14808-60-7)	Listed: October 1, 1988
Titanium Dioxide (CAS 1317-70-0)	Listed: September 2, 2011

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

free respirable Crystalline (quartz) Silica (CAS 14808-60-7)
Titanium Dioxide (CAS 1317-70-0)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date Jul-14-2017

Revision date Jul-14-2017

References
ACGIH®: American Conference of Governmental Industrial Hygienists
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act
EPA: Environmental Protection Agency
FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Agency
SARA: Superfund Amendments and Reauthorization Act
TSCA: Toxic Substances Control Act
DOT: Department of Transportation
IMDG: International Maritime Dangerous Goods
IATA: International Air Transport Association

Version # 1.0

Further information Not available.

HMIS® ratings
Health: 0
Flammability: 2
Physical hazard: 0

NFPA ratings
Health: 1
Flammability: 2
Instability: 0

Disclaimer

This information is provided for the limited guidance to the user. While AMVAC believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.
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