



SAFETY DATA SHEET (SDS) ID: EPA Reg. No. 71512-36-74530, Gamma

SECTION 1: Product and Company IDs

Product name: Gamma (a.k.a. "DCC-3825 70 WDG")
Product use / type: Herbicide
Restrictions on use: See product label
SDS ID: EPA Reg. No.: EPA Reg. No. 71512-36-74530, Gamma
Chemical name / active ingredients: Tiafenacil. See Section 3.
Chemical family: Uracil (amide). See Section 3.
Manufacturer / Registrant Info:
 HELM Agro US, Inc. 401 E. Jackson St.
 Suite 1600, Tampa, FL 33602
 (813)-621-8846, info@helmagro.com
Chemical Emergency Number: 1-800-424-9300 (Chemtrec).
National Poison Control Center: 1-800-222-1222; 1-888-484-7546

SECTION 2: Hazard Communication

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Signal Word: Warning
Pictograms:



Organ toxicity, repeated exposure: Category 2
Acute aquatic toxicity: Category 1
Chronic aquatic toxicity: Category 1

Hazard Statements:

- May cause damage to eye, liver and kidney through prolonged or repeated exposure.
- Very toxic to aquatic life.
- Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Avoid release to the environment.
- Avoid breathing dust/fume/gas/mist
- Wear protective gloves / clothing / eye and face protection
- Wash hands and face thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- If exposed or concerned: Get medical advice / attention.
- Store locked up. Collect spillage. Dispose of contents / container in accordance with local regulations.

Other Information / Potential Hazards:

- See Section 15.

SECTION 3: Ingredient Composition

Chemical Name	CAS #	% Composition (exact values withheld as trade secrecy)
Active Ingredient: Tiafenacil	1220411-29-9	70
IUPAC: Methyl 3-((2RS)-2-(2-chloro-4-fluoro-5-[1,2,3,6-tetrahydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)pyrimidin-1(6H)-yl]phenylthio)propionamido) propionate CAS: Methyl N-(2-((2-chloro-5-(3,6-dihydro-3-methyl-2,6-dioxo-4-(trifluoromethyl)-1(2H)-pyrimidinyl)-4-fluorophenyl)thio)-1-oxopropyl)-β-alaninate		
Other:	N/R as trade secrecy**	Up to 30%**

**N/R as trade secrecy

SECTION 4: First Aid Measures

If swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

If on skin or clothes: Remove contaminated clothing and shoes. Rinse skin immediately with plenty of water for 15 or 20 minutes. Call a poison control center or doctor for treatment advice.

If in 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.

If inhaled: Move person to fresh air. If person is not breathing, call 911 or get medical help, then give artificial respiration, preferably with the aid of a pocket mask equipped with a one-way valve. Call a poison control center or doctor for further treatment advice.

First Aid Note: Have this safety data sheet, the product container or label with you when calling a poison control center or doctor or going for treatment.

Note to Physician: Treat symptomatically.

SECTION 5: Fire Fighting Measures

Flammable properties: Not listed. **Extinguishing media:** Water spray, polar resistant foam, dry chemical or carbon dioxide (CO₂). **Unsuitable extinguishing media:** High pressure water streams. **Firefighting measures:** Use extinguishing media appropriate for surrounding fire. Prevent contaminated firefighting waters and spillage from entering sewers, drains and waterways. Foam or dry chemical are preferred to minimize environmental contamination. Keep personnel upwind of fire. Wear full firefighting turn-out gear and self-contained breathing apparatus. **Protective equipment and precautions for firefighters:** Wear full protective firefighting gear including self-contained breathing apparatus pressure demand (MSHA/NIOSH approved or equivalent). **Hazardous decomposition products:** May decompose under fire conditions emitting gases and vapors such as nitrous vapors, oxides of sulfur and carbon monoxide, which may be toxic and irritating to the respiratory tract.

SECTION 6: Accidental Release Measures

Personal precautions: Isolate and post spill area. Wear protective gloves / clothing and eye protection. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation. See section 8 for personal protective equipment.

Environmental precautions: Prevent further spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Avoid release into the environment.

Methods for containment and cleanup: Contain spill. If on impervious surface, collect the product with a shovel and place in an adequately identified drum or other vessel. Remove to the area for chemical disposal. Wash the place with plenty of water, avoiding run-off to bodies of water. If on soil, collect the material according to the above description and also contaminated layer of soil. If in bodies of water, immediately discontinue human and animal consumption and contact local competent authorities.

SECTION 7: Handling and Storage

Precautions for safe handling: Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not breathe dust. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Avoid contamination of work clothing. **Precautions for safe storage:** Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Store in original container and handle in accordance with good industrial hygiene practices. Keep container tightly closed. Store in a cool, dry and well-ventilated place away from children and animals.

Incompatible storage situations: Separate pesticides during storage to prevent cross-contamination of other pesticides, fertilizers, food, water, and feed.

SECTION 8: Exposure Control / Protection

The following recommendations for exposure controls and personal protection are intended for the manufacture, formulation, and packaging of this material; or for other non-application situations. All forms of application should refer to the product label for personal protection equipment. For additional information, refer to the precautions/warnings on the product label. Always follow the label instructions when handling and using this product. **Exposure Guidelines:** Not established. **Engineering controls** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. **Personal protective equipment: Eye / face protection:** Wear chemical-tight goggles or safety glasses and full face-shield. **Body / skin protection:** Where contact is likely, wear chemical-resistant gloves (such as polyethylene, polyvinyl chloride (PVC), or nitrile rubber), coveralls over long-sleeved shirt and long pants, socks and chemical-resistant footwear. Wash contaminated work clothing before reuse. **Hand protection:** Wear chemical resistant gloves / hand protection. Wash outside of gloves before removing. **Respiratory protection:** A respirator is not normally required when handling sealed containers. Use effective engineering controls to comply with facility occupational exposure limits. In case of emergency spills, use a NIOSH-approved particulate respirator with any N, R, P or HE filter. If exposure limits are exceeded or irritation is experienced, a NIOSH/MSHA approved respiratory



protection should be worn. Positive pressure supplied air respirators may be required for high airborne contaminant concentrations. Use respiratory equipment in accordance with local regulations. **Ingestion:** Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. **General hygiene considerations:** Handle in accordance with good industrial hygiene practice. Remove and wash contaminated clothing before reuse. Launder separate from household laundry.

SECTION 9: Physical & Chemical Properties

Physical state: Solid. **Appearance:** Beige. **Odor:** Odorless. **pH:** 8.1 – 8.5 @ 20°C (in 1% suspension). **Melting point:** Not available. **Boiling point:** Not applicable, decomposes after melting. **Freezing point:** Not applicable. **Flash point:** Not flammable. **Evaporation rate:** Not available. **Flammability:** Not flammable. **Flammable limits:** Not established. **Vapor pressure:** 5.9×10^{-4} Pa @ 25°C (active ingredient). **Vapor density:** Pour density: 0.53 g/mL. Tap bulk density: 0.587 g/mL. **Solubility:** Soluble in dichloroethane, acetone and ethyl acetate. **Water Solubility:** 26.5 mg/L. **Viscosity:** Not listed. **n-Octanol / water partition coefficient:** Log10Pow = 1.9 (active ingredient). **Auto-ignition temperature, decomposition temperature, volatility:** Each not listed or not available.

SECTION 10: Stability & Reactivity

Reactivity / chemical stability: Stable under normal temperature and conditions / no evidence of reactivity. **Conditions / Materials to avoid:** Extreme heat, sparks and fire. **Incompatible materials:** None known. **Hazardous decomposition products:** May decompose under fire conditions to release vapors or gases which are toxic and irritating to the respiratory tract. **Hazardous reactions:** Not expected under normal conditions of handling and use.

SECTION 11: Toxicological Information

Acute Toxicity: Acute oral toxicity (LD50): >5000 mg/kg [Rat]. Acute dermal toxicity (LD50): >2000 mg/kg [Rat]. Acute inhalation toxicity (LC50): >5.29 mg/L [actual airborne concentration]; >10.80 mg/L (nominal) 4 hour(s) [Rat]. **Skin Irritation:** Non-irritating; Primary dermal irritation index = 0.0 [Rabbit]. **Eye Irritation:** Minimally irritating; Mild conjunctivitis subsided within 48 hours in test animals [Rabbit]. **Sensitization:** Not a sensitizer. **Mutagenicity:** No evidence from testing. **Carcinogenicity:** Tests with Tiafenacil on mice and rats showed no potential for carcinogenicity. **Reproductive Toxicity:** A two-generation study on rats with Tiafenacil showed no evidence of reproductive toxicity at dietary doses of up to 1000 ppm (up to 90 mg/kg bw/day). **Target Organ Effects:** Ocular opacity was observed in rats and dogs exposed to Tiafenacil at levels ranging from 50 – 2000 ppm. Systemic effects to liver and kidneys were seen at extremely high doses of 2000 ppm or greater. **Aspiration:** No data available.

SECTION 12: Ecological Information

Summary of Effects: Tiafenacil is practically non-toxic to birds, fish and aquatic invertebrates. **Ecotoxicity Data (Tiafenacil):** Fish (Rainbow Trout) 96-hour LC50 > 79 mg/L (practically non-toxic). Invertebrate (*Daphnia magna*) 48-hour EC50 > 78.29 ppm (practically non-toxic). Algae (*Pseudokirchneriella subcapitata*) 96-hour ErC50 = 6.6 µg/L (highly toxic). Aquatic plant (*Lemna gibba*) 7-day NOEC = 1.4 mg/L. Bobwhite Quail Acute LD50 > 2250 mg/kg body weight (practically non-toxic). Mallard Duck Acute LD50 > 2250 mg/kg body weight (practically non-toxic). Sub-Acute Dietary Bird LC50 > 5620 ppm in diet for both Quail and Mallard. **Persistence / Degradability:** Tiafenacil degrades rapidly in soil, with half-life values ranging from 2 – 67 days in field conditions. Hydrolysis is dependent on pH, with increasing pH causing faster degradation. Hydrolysis @ 25 – 35°C: DT50 = stable @ pH 4, 20.5 days @ pH 7, 5.1 days @ pH 9. **Bioaccumulative Potential:** The potential for Tiafenacil to bioaccumulate is extremely low (Log Pow = 2.0). **Mobility in Soil:** Tiafenacil shows moderate to high mobility in various soils under laboratory conditions, but field dissipation studies show limited downward movement (no more than 6 inches) through soil leaching.

SECTION 13: Disposal Information

disposal: Wastes resulting from the use of this product that cannot be used must be disposed in accordance with applicable Federal, State or local regulations at an approved waste disposal facility. Do not contaminate water, food, or feed by disposal. **Container Disposal:** Nonrefillable container. DO NOT reuse or refill this container. Proper disposal procedures depend on the size and composition of the product container, so follow the disposal directions on the product label which are specific to the container. Refer to container label for additional information.

Product / waste

SECTION 14: Transport Information

Not subject to U.S. DOT regulation in packages less than or equal to 119 gallons (450 liters). U.S. DOT for packages greater than 119 gallons (450 liters), IMDG, IATA: UN3077, Environmentally Hazardous Substance, solid, n.o.s. (Tiafenacil), 9, III.

SECTION 15: Regulatory Information

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: **Signal word:** Caution. **EPA Registration No.:** 71512-36-74530. **Hazards to Humans and Domestic Animals.** Harmful if swallowed or absorbed through skin. Avoid contact with skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. **ENVIRONMENTAL HAZARDS.** This pesticide is toxic to estuarine/marine invertebrates. Do not apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment wash waters or rinsate. **Ground Water Advisory.** Tiafenacil has properties and characteristics associated with chemicals detected in ground water. This chemical may leach into ground water if used in areas where soils are permeable, particularly where the water table is shallow. **Surface Water Advisory.** Tiafenacil may impact surface water due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow groundwater. This chemical is classified as having high potential for reaching surface water via runoff for several days after application. A level, well-maintained vegetative buffer strip between areas to which this chemical is applied and surface water features such as ponds, streams, and springs will reduce the potential loading of this chemical from runoff water and sediment. Runoff of this chemical will be reduced by avoiding application when rainfall is forecast to occur within 48 hours. **Read product label, label precautions, and ensure all necessary precautions.**

SARA 312: None. SARA 313: None listed. California Proposition 65: Not listed

SECTION 16: Other Information

NFPA Ratings:	NFPA Ratings:	NFPA Ratings:	NFPA Ratings:
	Health	Fire	Instability
	1	0	0

Acronyms which may or may not be referenced: ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; CST - Centistokes; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; FIFRA - Federal Insecticide, Fungicide and Rodenticide Act; GHS - Global Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; MP - Marine Pollutant; NFPA - National Fire Protection Association; NIOSH - National Institute for Occupational Safety and Health; NJSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

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Revision Date: September 11th, 2023. **Revision no. 1**
Reason for Revision: SDS review and truncate. Fixed formatting errors. Confirm/Update Section 2, 5-8 (added safety language), 10 (redundancy), 12; confirm Section 14. Truncate, update, and/or review Sections 15-16. Address change.

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