



SAFETY DATA SHEET

SDS ID: 71512-36-74530

1. IDENTIFICATION

Product Name:	Gamma
Synonyms:	DCC-3825 70 WDG
Chemical Name:	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
Chemical Family:	Uracil (amide)
Recommended Uses:	Agricultural industry: Herbicide It is a violation of Federal law to use this product in a manner inconsistent with its labeling.
EPA Registration No.:	71512-36-74530
Company Identification:	HELM Agro US, Inc. 401 E Jackson St., Suite 1400 Tampa, FL 33602 813-621-8846 info@helmagro.com
24 Hour Emergency Number:	For Transportation emergency, spills, leak, fire or accident call: CHEMTREC 1-800-424-9300
For Medical emergency call:	National Poison Control Center at 1-800-222-12221-888-484-7546

2. HAZARD(S) IDENTIFICATION

Hazard Classification	Specific target organ toxicity, repeated exposure (Category 2) Acute aquatic toxicity (Category 1) Chronic aquatic toxicity (Category 1)
Signal Word:	WARNING
Hazard Symbols:	
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:	Do not breathe dust. Get medical attention if you feel unwell. Avoid release to the environment. Collect spillage. Dispose of contents and container in accordance with the product label.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	CAS #:	% by Weight:	TLV/PEL:
Active Ingredient: Tiafenacil	1220411-29-9	70	Not established
* 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 (CAS)			

4. FIRST-AID MEASURES

Ingestion:	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 the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Eye Contact:	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.
Skin Contact:	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.
Inhalation:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment.	

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Water spray, polar resistant foam, dry chemical or carbon dioxide (CO ₂).
Unusual Fire and Explosion Hazards:	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.
Fire Fighting Instructions:	Keep personnel upwind of fire. Wear full firefighting turn-out gear and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Precautionary Measures:	Use protective equipment and engineering controls identified in section 8 of this document.
Containment and Clean-Up:	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.

7. HANDLING AND STORAGE

Precautions:	Avoid contact with skin, eyes or clothing. Do not breathe dust. 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 use.
Storage:	Store in original container, in a secured, dry and cool place separate from fertilizer, food, and feed. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<p>The recommendations in this section for exposure controls and Personal Protection are intended for industrial settings (such as formulation or packaging facilities) or for other non-application situations.</p> <p>For additional information, refer to the precautions/warnings on the product label. Always follow the label instructions when handling and using this product.</p>	
Exposure Limits:	Not established.
Engineering Controls:	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits.
Personal Protection:	
Ingestion:	Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.
Eye Contact:	Where eye contact is likely, use protective eyewear (such as goggles or face shield).
Skin Contact:	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.
Inhalation:	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.	

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Appearance:	Beige solid
Odor:	Odorless
pH:	8.1 – 8.5 @ 20°C (in 1% suspension)
Boiling Point:	Not applicable, decomposes after melting
Melting Point:	Not available
Freezing Point:	Not applicable
Flash Point:	Not flammable
Evaporation Rate:	Not available
Flammability:	Non-flammable
Flammable Limits:	Not established
Vapor Pressure:	5.9×10^{-4} Pa @ 25°C (active ingredient)
Vapor Density:	Not available
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
N-Octanol/Water:	$\text{Log}_{10}P_{ow} = 1.9$ (active ingredient)
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	Not available
Volatility:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	No evidence of reactivity.
Stability:	This product is stable under normal use and storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Avoid contact with heat or open flame.
Reactivity:	No evidence of reactivity.
Stability:	This product is stable under normal use and storage conditions.
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.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:	Acute oral toxicity (LD ₅₀): >5000 mg/kg [Rat] Acute dermal toxicity (LD ₅₀): >2000 mg/kg [Rat] Acute inhalation toxicity (LC ₅₀): >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:	Multiple genotoxicity tests showed no evidence of mutagenicity.
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.

12. ECOLOGICAL INFORMATION**Summary of Effects:**

Tiafenacil is practically non-toxic to birds, fish and aquatic invertebrates. Tolpyralate is highly toxic to terrestrial and aquatic plants.

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 P_{ow} = 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.

13. DISPOSAL CONSIDERATIONS**Waste Disposal:**

Wastes resulting from the use of this product may be disposed of on site or 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.

14. TRANSPORT INFORMATION**US DOT Classification:**

CLASS 9. Not regulated when shipped in non-bulk packaging by highway or rail.

	Non-bulk (Ground Transport)	Bulk (Ground Transport)
Proper Shipping Name:	Not regulated	Environmentally Hazardous Substance, Solid, N.O.S. (Tiafenacil)
Hazard Class:	Not regulated	Class 9
Identification Number:	Not regulated	UN 3077
Packing Group:	Not regulated	PG III
Hazardous Substances Reportable Quantity:	Not applicable.	
Special Provisions for Transport:	Class 9 placard not required for non-bulk packaging transported by highway or rail within the U.S. [49CFR 172.504(f)(9)].	
	IATA (Air Transport)	IMDG (Ocean Transport)
Proper Shipping Name:	Environmentally Hazardous Substance, Solid, N.O.S. (Tiafenacil)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TIAFENACIL)
Hazard Class:	Class 9	CLASS 9
Identification Number:	UN 3077	UN 3077
Packing Group:	PG III	PG III

15. REGULATORY INFORMATION**U.S. Federal and State Regulations:**

SARA 313 Inventory Ingredients:	Not Listed
SARA 312 Hazards Classification:	None
Listed as carcinogen by:	
IARC:	Not Listed
NTP:	Not Listed
OSHA:	Not Listed
CA Prop 65:	Not Listed
TSCA:	Exempt from TSCA, subject to FIFRA.

FIFRA:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law (FIFRA). FIFRA requirements differ from the OSHA classification criteria and hazard information required for safety data sheets in Section 2 above, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required by FIFRA on the pesticide label:

CAUTION

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. 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.

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.

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 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.

Canada (WHMIS): Exempt

16. OTHER INFORMATION

<u>NFPA Hazard Ratings</u>	0 Minimal
Health: 1	1 Slight
Flammability: 0	2 Moderate
Instability: 0	3 Serious
	4 Extreme
<u>Notice to Reader</u>	
<p><i>All information contained in this Safety Data Sheet is furnished free of charge and is intended for your evaluation. In our opinion, the information as of the date of the Safety Data Sheet is reliable; however, it is your responsibility to determine the suitability of the information for your use. You are 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 or because of applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information gathered by you; and you must make independent determinations of the suitability and completeness of the information from all sources to assure both proper use of the material described herein and the safety and health of employees. Accordingly, no guarantee expressed or implied is made by ISK Biosciences Corporation as to the results to be obtained based upon your use of the information, nor does ISK Biosciences Corporation assume any liability arising out of your use of the information.</i></p>	

SDS Revision History: New SDS

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Date of last revision: N/A