

GENESIS ARKOS SAFETY DATA SHEET

GENESIS AGRI-PRODUCTS
2522 OLD TOWN ROAD
UNION GAP, WASHINGTON 98903
Emergency Phone # (509) 452-0302

1. IDENTIFICATION

PRODUCT IDENTIFIER: Arkos
SYNONYMS: None Available
RECOMMENDED USE: Fungicide

CHEMICAL FAMILY: Not Applicable
GENERIC DESCRIPTION: Not Applicable
RESTRICTIONS ON USE: Agriculture, For professional users only.

MOLECULAR WEIGHT: Not Applicable
CHEMICAL FORMULA: Not Applicable

MANUFACTURER INFORMATION

COMPANY NAME: GENESIS AGRI-PRODUCTS

ADDRESS: 2522 OLD TOWN ROAD
UNION GAP, WA 98903

TELEPHONE: (509) 575-8382

EMERGENCY PHONE:

US: 1-800-424-9300 (CHEMTREC)

INTERNATIONAL: 1-202-483-7616

2. HAZARDS IDENTIFICATION

GHS Classification

Specific target organ toxicity : Category 2 (Blood)
- repeated exposure (Oral)

Acute aquatic toxicity : Category 1

Chronic aquatic toxicity : Category 2



LABEL ELEMENTS:**SIGNAL WORD:** WARNING

HAZARD STATEMENT: May cause damage to organs (Blood) through prolonged or repeated exposure if swallowed. Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

PREVENTION - Do not breathe dust/fume/gas/mist/vapours/spray. Avoid release to the environment.

RESPONSE - Get medical advice/attention if you feel unwell. Collect spillage.

DISPOSAL - Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INGREDIENTS

<u>CHEMICAL NAME</u>	<u>CAS#</u>	<u>Typical Composition (% w/w)</u>
1H-IMIDAZOLE, 1-((4-CHLORO-2-(TRIFLUO	68694-11-1	>=30 - <50

4. FIRST-AID MEASURE**SYMPTOMS AND EFFECTS OF EXPOSURE & INSTRUCTIONS FOR SPECIAL MEDICAL TREATMENT**

GENERAL ADVICE: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

IF INHALED: If breathed in, move person into fresh air. Give oxygen or artificial respiration if needed. Consult a physician after significant exposure.

SKIN CONTACT: If on clothes, remove clothes. Wash off immediately with plenty of water for at least 15 minutes. If skin irritation occurs, seek medical advice/attention. Wash contaminated clothing before re-use. Destroy contaminated shoes.

EYE CONTACT: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if irritation develops and persists.

INGESTION(SWALLOWING): Do NOT induce vomiting. Give small amounts of water to drink. Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

Symptoms may be delayed. May cause damage to organs through prolonged or repeated exposure.

Notes to physician

The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

5. FIRE-FIGHTING MEASURES

FLAMMABLE PROPERTIES:

EXTINGUISHING MEDIA:

Extinguishing media – large fires

Alcohol-resistant foam

(on small fires)

Carbon dioxide (CO₂)

Dry chemical

UNSUITABLE EXTINGUISHING MEDIA:

Water spray jet

SPECIFIC HAZARDS DURING FIREFIGHTING:

Burning produces noxious and toxic fumes. Thermal decomposition can lead to release of irritating gases and vapours.

FURTHER INFORMATION:

Fight fire with normal precautions from a reasonable distance. Keep away from fire, sparks and heated surface. Use water spray to cool unopened containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS:

Body covering protective clothing, full “turn-out” gear.
Self-contained breathing apparatus (EN 133)

6. ACCIDENTAL RELEASE MEASURES

SPILLS OR RELEASES

PERSONAL PRECAUTIONS, PROTECTIVE

Evacuate personnel to safe areas. Ensure

EQUIPMENT AND EMERGENCY PROCEDURES:

adequate ventilation. Avoid contact with skin and eyes. Wear suitable protective clothing, gloves and eye/face protection. Keep in properly labeled containers. Dispose of rinse water as waste water.

ENVIRONMENTAL PRECAUTIONS:

Toxic to aquatic life. Do not allow material to contaminate ground water system. Prevent product from entering drains. Avoid release to the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

Soak up with inert absorbent material (e.g. sand silica gel, acid binder, universal binder, sawdust). Shovel into suitable container for disposal. Large spills should be collected mechanically (remove by pumping) for disposal. Ventilate the area.

7. HANDLING AND STORAGE

ADVICE ON SAFE HANDLING:

Handle and open container with care. Protect from contamination. Use only in well-ventilated areas. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid inhalation, ingestion and contact with skin and eyes. Wear suitable protective clothing, gloves and eye/face protection. Wash thoroughly after handling. Keep container closed when not in use. Allergic reactions may develop after inhalation of low concentrations, also several hours after exposure. Regular medical checks, including lung function, are recommended for long term and repeated use of isocyanates.

CONDITIONS FOR SAFE STORAGE:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Components with workplace control parameters:**

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

Components	CAS-No
1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUO	68694-11-1

Personal protective equipment

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks:

Chemical resistant protective gloves.

Eye protection:

Safety glasses with side-shields or safety goggles.

Skin and body protection:

Long sleeved clothing. Remove and wash contaminated clothing before re-use. Discard contaminated shoes. To protect against splashes from pouring: Rubber or plastic boots, rubber or plastic apron.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes and clothing. Do not inhale aerosol. Ensure adequate ventilation, especially in confined areas. When using do not eat, drink or smoke. Wash thoroughly after handling. Keep working clothes separately. Remove and wash contaminated clothing before re-use. Contaminated work clothing should be allowed out of the workplace. Allergic reactions may develop after inhalation of low concentrations, also several hours after exposure. Regular medical checks, including lung function, are recommended for long term and repeated use of iscyantes.

9. PHYSICAL AND CHEMICAL PROPERTIES**APPEARANCE****PHYSICAL STATE:**

Liquid, suspension

COLOR:	Off-white, to, tan
ODOR:	Mild
ODOR THRESHOLD:	Not available.
pH:	6.5 – 8.5
MELTING POINT/FREEZING POINT:	Not available.
INITIAL BOILING POINT/BOILING RANGE:	Not available.
FLASH POINT:	Not available.
EVAPORATION RATE:	(Ether=1): Not Applicable
FLAMMABILITY (SOLID,GAS):	Does not ignite
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:	
FLAMMIBILITY LIMIT-LOWER (%)	Not available.
FLAMMIBILITY LIMIT-UPPER (%)	Not available.
EXPLOSIVE LIMIT-LOWER (%)	Not available.
EXPLOSIVE LIMIT-UPPER (%)	Not available.
VAPOR PRESSURE:	Not available.
VAPOR DENSITY:	Not available.
RELATIVE DENSITY:	1.161 – 1.162 (25°C)
SOLUBILITY(IES):	
SOLUBILITY IN WATER:	Complete
PARTITION COEFFICIENT (N-OCTANO/WATER:	Not available.
AUTO-IGNITION TEMPERATURE:	Not available.
DECOMPOSITION TEMPERATURE:	Not available.
THERMAL DECOMPOSITION:	Not available
VISCOSITY:	Not available.
OTHER INFORMATION:	
DISPERSION PROPERTIES:	See solubility in water.
WATER/OIL DIST. COEFF:	Not available.
%VOLATILE (BY WT.):	Not available.
VOLATILITY	Not available.
SALT-OUT TEMPERATURE:	Not available.
SPECIFIC GRAVITY (H₂O=1):	Not available.

10. STABILITY AND REACTIVITY

POSSIBILITY OF HAZARDOUS REACTIONS:	Hazardous polymerization does not occur.
CONDITIONS TO AVOID:	None known.
HAZARDOUS DECOMPOSITION PRODUCTS:	Burning produces noxious and toxic fumes.

11. TOXICOLOGICAL INFORMATION

IMMEDIATE EFFECTS/DELAYED EFFECTS OF SHORT-TERM EXPOSURE/CHRONIC EXPOSURE

Information on likely routes of exposure

Skin Absorption

Inhalation

Ingestion

Acute toxicity

Product:

Acute oral toxicity: Acute toxicity estimate: 3,384 mg/kg
Method: Calculation method

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUORO

Acute oral toxicity: LD50 (Rat, male and female): 1,420 mg/kg
Acute dermal toxicity: LD50 (Rabbit, male and female): >5,000 mg/kg

Skin corrosion/irritation

Product:

Species: Rabbit

Result: slight irritation

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUORO

Species: Rabbit
Result: No skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: No eye irritation

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUORO

Species: Rabbit
Result: Mild eye irritation

Respiratory or skin sensitization

Product:

Species: Guinea pig

Method: Buehler Test

Result: Did not cause sensitization on laboratory animals.

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Species: Guinea pig

Assessment: May cause sensitization by skin contact.

Result: Causes sensitization

Germ cell mutagenicity

Product:

Germ cell mutagenicity: negative

Assessment

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Genotoxicity in vitro:

Test Type: Ames test

Metabolic activation: with and without metabolic activation

Result: negative

Test Type: Unscheduled DNA synthesis (UDS)

Result: negative

Genotoxicity in vivo:

Test Type: In vivo micronucleus test

Species: Mouse

Result: negative

Germ cell mutagenicity:

Not mutagenic in Ames Test, negative

Assessment

Carcinogenicity

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Carcinogenicity – Assessment:

Animal testing did not show any carcinogenic effects.

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at level greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Reproductive toxicity – Assessment: No effects on or via lactation. Experiments have shown reproductive toxicity effects on laboratory animals. Did not show teratogenic effects in animal experiments.

STOT – repeated exposure

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Exposure routes: Oral

Target Organs: Blood

Assessment: May cause damage to organs through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION

ECOTOXICITY

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFULO:

Toxicity to fish:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.58 mg/l
	Exposure time: 96 h
	Test Type: static test
	GLP: yes
	LC50 (Cyprinus carpio (Carp)): 0.76 mg/l
	Exposure time: 96 h

	<p>Test Type: semi-static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 203</p> <p>GLP: yes</p>
	<p>LC50 (Cyprinodon variegatus (sheepshead minnow)): 1.4 mg/l</p> <p>Exposure time: 96 h</p> <p>Test Type: flow-through test</p> <p>Analytical monitoring: yes</p> <p>GLP: yes</p>
Toxicity to daphnia and other Aquatic invertebrates:	<p>EC50 (Daphnia magna (Water flea)): 1.42 mg/l</p> <p>Exposure time: 48 h</p> <p>Test Type: semi-static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 202</p> <p>GLP: yes</p>
	<p>LC50 (Mysid shrimp): 0.62 mg/l</p> <p>Exposure time: 96 h</p> <p>Test Type: flow-through test</p> <p>Analytical monitoring: yes</p> <p>GLP: yes</p>
Toxicity to algae:	<p>EC50 (Freshwater algae): >4.7 mg/l</p> <p>End point: Growth rate</p> <p>Exposure time: 72 h</p> <p>Test Type: static test</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 201</p> <p>GLP: yes</p>
	<p>EC50 (Secenedesmus capricornutum (fresh water algae)): 1.91 mg/l</p> <p>End point: Growth rate</p> <p>Exposure time: 72 h</p> <p>Analytical monitoring: yes</p> <p>Method: OECD Test Guideline 201</p> <p>GLP: yes</p>
Toxicity to fish (Chronic toxicity):	<p>NOEC (Cyprindon variegatus (sheepshead minnow)): 0.12 mg/l</p> <p>Exposure time: 24 d</p>

Test Type: flow-through test

Toxicity to daphnia and other aquatic Invertebrates (Chronic toxicity): NOEC (Daphnia magna (Water flea)): 0.14 mg/l
Exposure time: 21 d
Test Type: flow-through test
Analytical monitoring: yes
GLP: yes

Persistence and degradability

No data available

Bioaccumulative potential

Components:

1H-IMIDAZOLE, 1-(1-((4-CHLORO-2-(TRIFLUORO-

Partition coefficient: noctanol/ water: log Pow: 1.4

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential: Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone – CAA Section 602 Class I
Substances.
Remarks: This product neither contains, nor was manufactured
with a Class I or Class II ODS as defined by the U.S. Clean Air Act
Section 602 (40 CFR 82, Subpt. A, App. A + B).

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues: Dispose of waste in accordance with environmental legislation.
Pesticide wastes are toxic. Do not contaminate ponds,
waterways or ditches with chemical or used container.

14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Triflumizole)
Class: 9
Packing group: III
Labels: 9

IATA-DGR

UN/ID No. UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Triflumizole)
Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 964

IMDG-Code

UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Triflumizole)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(Triflumizole)
Class: 9
Packing group: III
Labels: CLASS 9

ERG Code: 171
 Marine pollutant: yes (Trifumizole)
 Remarks: Not regulated by DOT and TDG if shipped or transported in packaging less than 450 liters by road and/or rail. Please refer to 49 CFR for any details.

15. REGULATORY INFORMATION

EPCRA – Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Component RQ (lbs)
Butanone	78-93-3	5000	*

*:Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylene oxide	75-21-8	10	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SSRA 311/312 Hazards: Acute Health Hazard
 Chronic Health Hazard

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

The following Hazardous Substances are listed under the U.S. Clean Water Act, Section 311, Table 116.4A:

Sodium hydroxide	1310-73-2	0.0065%
Methyloxirane	75-56-9	0.00%

The following Hazardous Chemicals are listed under the U.S. Clean Water Act, Section 311, Table

117.3: sodium hydroxide	1310-73-2	0.0065%
Methyloxirane	75-56-9	0.00%

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop. 65

WARNING! This product contains a chemical known to the State of California to cause cancer.

1,4-dioxane	123-91-1
Ethylene oxide	75-21-8
Methyloxirane	75-56-9

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ethylene oxide	75-21-8
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TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

FIFRA Hazard Information:

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 pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below.

CAUTION

Harmful if swallowed.

This product is toxic to fish. 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 cleaning equipment or disposing of equipment washwater or rinsate. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

Do not use or store near heat or open flame.

16. OTHER INFORMATION/PREPERATION DATE

OTHER SPECIAL CONSIDERATIONS: Not applicable.

NOTICE TO READER:

The buyer assumes all risk in connection with the use of this material. The buyer assumes all responsibility for ensuring this material is used in a safe manner in compliance with applicable environmental, health and safety laws, policies and guidelines. Genesis Agri Products, Inc. assumes no responsibility or liability for the information supplied on this sheet, including any damages or injury caused thereby. Genesis Agri Products does not warrant the fitness of this material for any particular use and assumes no responsibility for injury or damage caused directly or indirectly by or related to the use of the material. The information contained in this sheet is developed from what Genesis Agri Products, Inc. believes to be accurate and reliable sources, and is based on the opinions and facts available on the date of preparation.

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