

SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Chemical Name	Mixture
Trade Names	Minerva Duo™
CAS No.	Mixture
EPA Identification Number	83070-11-60063

Relevant identified uses of the substance or mixture and uses advised against

Identified Use(s)	Restricted Use Pesticide (Certified Applicators Only)
Uses Advised Against	It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Details of the supplier of the safety data sheet

Company Identification	Sipcam Agro USA, Inc. 2525 Meridian Parkway, Suite 350 Durham, NC 27713 United States of America
Telephone	(919) 226-1195

Emergency telephone number

Emergency Phone No.	CHEMTREC 24 hr. 1-800-424-9300 / 1 (703) 527-3887 (Collect calls accepted)
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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

OSHA HCS (29 CFR 1910.1200)	Acute Tox. 3; Eye Dam. 1; Carc. 2; Repr. 2; STOT SE 3; STOT RE 1
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Label elements

This is a pesticide product registered with 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 labeling information below applies to non-pesticide workplace labels. For pesticide label information, refer to Section 15.

Hazard Symbol(s)



Signal Word(s)

DANGER

Hazard Statement(s)

Toxic if inhaled (Aerosol or mist formation). Toxic if swallowed.
 Causes serious eye damage.
 Suspected of causing cancer.
 Suspected of damaging the unborn child.
 May cause respiratory irritation (Aerosol or mist formation)
 Causes damage to organs through prolonged or repeated exposure: Liver, Blood, Immune system, Endocrine system, Spleen, Pituitary gland, testicles.

Precautionary Statement(s)

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not breathe spray/mists.

Do not eat, drink or smoke when using this product.

Use of high-pressure spray may cause toxic aerosols. Use only outdoors or in a well-ventilated area.

In case of inadequate ventilation wear respiratory protection.

Wash hands and exposed skin after use.

Contaminated work clothing should not be allowed out of the workplace.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If breathing is laboured, administer oxygen. Call a POISON CENTER/doctor if you feel unwell. Treat symptomatically.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. Do not give anything by mouth to an unconscious person. Treat symptomatically.

Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.

Other hazards

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Additional Information

None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Composition/information on ingredients	%W/W	CAS No.	Hazard Statement(s)
Triphenyltin hydroxide	~ 21	76-87-9	Acute Tox. 2; H300 Acute Tox. 3; H311, H331 Skin Irrit. 2; H315 Eye Dam. 1; H318 Carc. 2; H351 Repr. 2; H361 STOT-SE 3; H335 STOT-RE 1; H372 Aquatic Acute 1; H400 Aquatic Chronic 1; H410
Tetraconazole	~ 8	112281-77-3	Acute Tox. 4; H302 Acute Tox. 4; H332 Aquatic Acute 2; H401 Aquatic Chronic 2; H411

Additional Information – None

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. If breathing is laboured, administer oxygen. Call a POISON CENTER/doctor if you feel unwell. Treat symptomatically.
Skin Contact	Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.
Eye Contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Ingestion	Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. Do not give anything by mouth to an unconscious person. Treat symptomatically.
Most important symptoms and effects, both acute and delayed	Toxic if inhaled (Aerosol or mist formation). Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed	IF INHALED: Immediately call a POISON CENTER or doctor/physician.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media	
-Suitable Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or water spray.
-Unsuitable Extinguishing Media	Do not use water jet.
Special hazards arising from the substance or mixture	Combustion or thermal decomposition will evolve toxic and irritant vapours. Forms oxides of carbon and nitrogen, also chlorine and chlorinated compounds. Decontaminate equipment or materials used in pesticide fires.
Advice for fire-fighters	Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	Do not get in eyes. Avoid contact with skin. Do not breathe spray/mists. Wear protective gloves/protective clothing/eye protection/face protection. Observe directions on label and instructions for use. See Also Section 15.
Environmental precautions	Prevent substance entering sewers. Observe directions on label and instructions for use. See Also Section 15.
Methods and material for containment and cleaning up	Cover spills with inert absorbent material. Transfer to a container for disposal or recovery. Collect spillage. Wash the spillage area with water. If possible prevent water running into sewers.
Reference to other sections	Observe directions on label and instructions for use. See Also Section 15.
Additional Information	None

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Do not handle until all safety precautions have been read and understood. Do not get in eyes. Avoid contact with skin. Do not breathe spray/mists. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Observe directions on label and instructions for use. See Also Section 15.
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Conditions for safe storage, including any incompatibilities

-Storage temperature
-Incompatible materials

Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Strong oxidizing agents or reducing agents. Strong acids / bases.

Specific end use(s)

Restricted Use Pesticide (Certified Applicators Only)

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

SUBSTANCE.	CAS No.	(8hr TWA)		(STEL)		Note:
		PEL (OSHA)	TLV (ACGIH)	PEL (OSHA)	TLV (ACGIH)	
Tin, organic compounds, as Sn	-----	-----	0.1 mg/m3	-----	0.2 mg/m3	-----

Exposure controls

Appropriate engineering controls

Do **NOT** aerosolize or atomize to produce inhalable-size particles.
Use low-pressure course spray only.

Personal protection equipment

Eye/face protection



Wear protective eyewear (goggles, face shield, or safety glasses).

Skin protection (Hand protection/ Other)



Gloves (PVC, Neoprene, or Natural rubber).

Respiratory protection



Not normally required. Do not breathe spray/mists.

Thermal hazards

Not normally required.

Environmental Exposure Controls

Do not allow to enter drains, sewers or watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Liquid

Color.

Off-white

Odor

Not available

Odor Threshold (ppm)

Not available

pH (Value)

6.94

Melting Point/Freezing Point (°C)

Not available

Boiling point/boiling range (°C)

Not available

Flash Point (°C)

Not available

Evaporation Rate

Not available

Flammability (solid, gas)

Not applicable

Explosive Limit Ranges	Not applicable
Vapour Pressure (Torr)	Not available
Vapour Density (Air=1)	Not available
Density (g/ml)	1.139 (9.5 lb/gal)
Specific Gravity	1.139
Solubility (Water)	Not available
Solubility (Other)	Not available
Partition Coefficient (n-Octanol/water)	Not available
Auto Ignition Point (°C)	Not available
Decomposition Temperature (°C)	Not available
Kinematic Viscosity (cSt)	~ 253 @ 40 °C
Explosive properties	Not explosive
Oxidizing properties	Not available
Other information	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions.
Chemical stability	Stable.
Possibility of hazardous reactions	None anticipated.
Conditions to avoid	Avoid contact with heat and ignition sources.
Incompatible materials	Strong oxidizing agents or reducing agents. Strong acids / bases.
Hazardous decomposition product(s)	Combustion or thermal decomposition will evolve toxic and irritant vapours: acrid smoke. Forms oxides of carbon and nitrogen, also chlorine and chlorinated compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes: Inhalation, Skin Contact, Eye Contact

Information on toxicological effects

Substances

Not applicable

Mixtures

Acute toxicity	Oral: LD50 174 mg/kg-bw (rat) Dermal: LD50 >5050 mg/kg-bw (rat) Inhalation: LC50 >0.52 mg/L (rat)
Skin corrosion/irritation	Causes mild skin irritation.
Serious eye damage/irritation	Causes serious eye damage.
Respiratory or skin sensitization	It is not a skin sensitiser in animal tests.
Germ cell mutagenicity	Not available.
Carcinogenicity	Not available.
Reproductive toxicity	Not available.
STOT - single exposure	Not available.
STOT - repeated exposure	Not available.
Aspiration hazard	Not available.

Substances in preparations / mixtures

Triphenyltin hydroxide (CAS# 76-87-9):

Acute toxicity Oral: LD50 = 156 mg/kg-bw (rat)
Dermal: LD50 = 1600 mg/kg-bw (rat)
Inhalation: LC50 = 0.063 mg/L (4 hr) (rat) (Inhalable Dust) - May cause respiratory irritation

Irritation/Corrosivity Causes serious eye damage. Causes skin irritation.
Sensitization Not to be expected.

Repeated dose toxicity Causes damage to organs through prolonged or repeated exposure: Liver, Blood, Immune system, Endocrine system, Spleen, Pituitary gland, testicles.

Carcinogenicity Suspected of causing cancer.

NTP	IARC	ACGIH	OSHA
No.	No.	No.	No.

Mutagenicity Not to be expected.
Reproductive toxicity Suspected of damaging the unborn child.

Tetraconazole (CAS# 112281-77-3):

Acute toxicity (calculated / estimated) Oral LD50: 1031 - 1248 mg/kg-bw (rat)
Dermal LD50: >2000 mg/kg-bw (rabbit)
Inhalation LC50: > 3.66 mg/L (4 hr) (rat)

Irritation/Corrosivity Unlikely to cause skin irritation. May cause eye irritation.
Sensitization Not to be expected.
Repeated dose toxicity Not to be expected. NOAEL (90 day) = 4.1 mg/kg (rat)

Carcinogenicity Not to be expected.

NTP	IARC	ACGIH	OSHA
No	No	No	No

Mutagenicity Not to be expected.
Reproductive toxicity Not to be expected.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Triphenyltin hydroxide (CAS# 76-87-9):

Short term LC50 (96 hour): 0.0015 mg/L (*Pimephales promelas*)
EC50 (48 hour): 0.01 mg/L (*Daphnia magna*).
EC50 (96 hour): 0.014 mg/L (*Pseudokirchneriella subcapitata*)

Long Term Very toxic to aquatic life with long lasting effects.

Tetraconazole (CAS# 112281-77-3):

Short term LC50 (96 hour): 4.3 - 4.8 mg/L (fish)
EC50 (48 hour): 3 mg/L (*Daphnia magna*)
EC50 (72 hour): 0.41 mg/l (*scenedesmus subspicatus*)

Long Term Toxic to aquatic life with long lasting effects.

Persistence and degradability

Part of the components are poorly biodegradable.

Bioaccumulative potential

Not determined.

Mobility in soil

Not determined.

Results of PBT and vPvB assessment

Not classified as PBT.

Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods	Disposal should be in accordance with local, state or national legislation. Consult an accredited waste disposal contractor or the local authority for advice.
Additional Information	None known.

SECTION 14: TRANSPORT INFORMATION

	Land transport (U.S. DOT) *	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN number	UN 3020	UN 3020	UN 3020
Proper Shipping Name	Organotin pesticide, liquid, toxic (Triphenyltin hydroxide)	Organotin pesticide, liquid, toxic (Triphenyltin hydroxide)	Organotin pesticide, liquid, toxic (Triphenyltin hydroxide)
Transport hazard class(es)	6.1	6.1	6.1
Packing group	III	III	III
Hazard label(s)	Poison	Poison	Poison
Environmental hazards	Marine Pollutant	Marine Pollutant	Yes
Special precautions for user	None Assigned	None Assigned	None Assigned

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

TSCA (Toxic Substance Control Act) - Inventory Status: This is a registered pesticide product regulated under Federal Insecticide, Fungicide, and Rodenticide Act and, therefore, the components of this product are not subject to listing on the TSCA inventory.

EPA FIFRA Information for SDS Section 15 (Regulatory 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 hazard information required on the pesticide label is reproduced below:

DANGER: Causes irreversible eye damage. May be fatal if swallowed. Harmful if inhaled. Do not get in eyes or on clothing. Wear goggles or face shield when handling. Avoid breathing spray mist. 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. The United States Environmental Protection Agency has determined that triphenyltin hydroxide, the active ingredient of this product, affects fetal development causing birth defects in laboratory animals. Exposure to triphenyltin hydroxide during pregnancy should be avoided.

Personal Protective Equipment (PPE):

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber ≥14 mils, nitrile rubber ≥14 mils, polyvinyl chloride (PVC) ≥14 mils, and viton ≥14 mils. If you want more options, follow the instructions for category C on an EPA chemical-resistance category selection chart.

Handlers exposed to the concentrate or diluted product must wear:

- Coveralls over long-sleeved shirt and long pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves, such as butyl rubber, nitrile rubber, or neoprene rubber
- Protective eyewear
- Chemical-resistant apron for mixing and loading or equipment maintenance
- Chemical-resistant headgear for overhead exposure
- A NIOSH approved particulate respirator with any N, R, or P filter, NIOSH approval number prefix TC-84A.; or a NIOSH-approved powered air purifying respirator with an HE filter with NIOSH approval number prefix TC-21C.

Handlers, mixers, loader, applicators, flaggers and others using engineering controls must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks



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- Chemical resistant gloves, such as butyl rubber, nitrile rubber, or neoprene rubber, during mixing and loading.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them.

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

Engineering Controls:

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d) (4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

Mixers and loaders supporting aerial chemigation applications must use a closed mixing and loading system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4)] for providing both dermal and inhalation protection. The system must include a mechanism for removing the pesticide and rinsate into mixing tanks and/or application equipment. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that is warranted by the manufacturer to minimize drippage to not more than 2 ml per disconnect point.

Mixers and loaders supporting ground applications must use a mechanical transfer system that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4)] for providing dermal protection. The system must be capable of removing the pesticide from the shipping container and transferring it into mixing tanks and/or application equipment. At any disconnect point, the system must be equipped with a dry disconnect or dry couple shut-off device that is warranted by the manufacturer to minimize drippage to not more than 2 ml per disconnect point.

Pilots must use an enclosed cockpit that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(6)].

Ground equipment applicators and flaggers must use an enclosed cab that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(5)].

All mixers, loaders, applicators, and flaggers must wear the personal protective equipment specified above for the task they are performing and all (except aerial applicators) must be provided and must have immediately available for use in an emergency, such as a spill or equipment failure, the PPE specified above for handlers not using engineering controls.

Applicators and flaggers must be in enclosed cabs.

Environmental Hazards:

This product may be toxic to fish, aquatic invertebrates and wildlife. Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift or runoff from treated areas may be hazardous to aquatic organisms adjacent to treatment areas. Exercise care when making applications of this product, and do not apply when atmospheric conditions favor drift or runoff. Do not apply with aircraft within 300 feet or with ground boom equipment within 100 feet of any natural body of water such as rivers, streams, ponds, lakes and reservoirs. Do not apply with aircraft when wind speed is greater than 10 mph. Apply this pesticide only as specified on this label. Do not contaminate water when disposing of equipment washwaters or rinsate.

In order to mitigate concern for reproductive effects to endangered bird and mammal species which may occur incidentally in sugarbeet growing areas, you are required to ascertain through the state Department of Agriculture, or Cooperative Extension Service, whether the treatment area may contain habitat of Federally listed bird and mammal species; if so, treatment must be avoided in these areas.

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

Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)
None	----	----	----

SARA 311/312 - Hazard Categories: Refer to SECTION 2 – HAZARDS IDENTIFICATION

SARA 313 - Toxic Chemicals (40 CFR 372):

Chemical Name	CAS No.	Typical %wt.
Tributyltin hydroxide	76-87-9	20 - 23

SARA 302 - Extremely Hazardous Substances(40 CFR 355):

Chemical Name	CAS No.	Typical %wt.	RQ (Pounds)	TPQ (Pounds)
None	-----	-----	-----	-----

Proposition 65 (California):

Chemical Name	CAS No.	Typical %wt.	Hazards
Tributyltin hydroxide	76-87-9	20 - 23	Cancer, developmental

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 2, 11, 12, and 15.

Date of preparation: December 9, 2021

Hazard Statement(s) and Risk Phrases Listed in: SECTION 2:/ SECTION 3:

Hazard Statement(s)

- H300: Fatal if swallowed.
- H302: Harmful if swallowed.
- H311: Toxic in contact with skin.
- H315: Causes skin irritation.
- H318: Causes serious eye damage.
- H331: Toxic if inhaled.
- H332: Harmful if inhaled.
- H335: May cause respiratory irritation.
- H351: Suspected of causing cancer.
- H361d: Suspected of damaging the unborn child.
- H372: Causes damage to organs through prolonged or repeated exposure.
- H400: Very toxic to aquatic life.
- H401: Toxic to aquatic life.
- H410: Very toxic to aquatic life with long lasting effects.
- H411: Toxic to aquatic life with long lasting effects.

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