

SAFETY DATA SHEET

Armor Tech TMI 2020 XL

1. IDENTIFICATION

Product name: **Armor Tech TMI 2020 XL**
Product type: Fungicide
EPA Registration No.: 53883-323-86064
Chemical name of active ingredient(s): Thiophanate-methyl: [Dimethyl (1,2-phenylene) bis (iminocarbonothioyl)] bis [carbamate]
Iprodione: 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2-4-dioxo-1-imidazolidinecarboxamide

Manufacturer/Registrant: **Control Solutions, Inc.**
5903 Genoa-Red Bluff
Pasadena, TX 77507
Phone: 1-800-424-9300

For fire, spill, and/or leak emergencies, contact Chemtrec: Phone: 1-800-222-1222
Poison Control Center Phone: 1-800-222-1222

2. HAZARDS IDENTIFICATIONS

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Toxicity:

	Acute oral	Acute dermal	Acute inhalation	Eye irritation	Skin irritation	Skin Sensitization
Category	4	NC	4	2B	NC	NC

NC: Not classified

SIGNAL WORD: WARNING

HAZARD STATEMENTS:

- Harmful if swallowed
- Harmful if inhaled
- Causes eye irritation

PICTOGRAMS:



PRECAUTIONARY STATEMENTS:

- Wash hand thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed: call a poison center or doctor if you feel unwell. Rinse mouth.
- Avoid breathing mist, vapors and spray. Use only outdoors or in a well-ventilated area. If inhaled: remove a person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.

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- Wash hand thoroughly after handling. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

PHYSICAL CHEMICAL HAZARDS: Do not store near or use with oxidizing agents.

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Thiophanate-methyl	23564-05-8	19.65	NE	NE	NA	NA
Iprodione	36734-19-7	19.65	NE	NE	NA	NA
Glycerin	56-81-5	< 60	15mg/m ³ (TWA, total); 5mg/m ³ (TWA, respirable fraction)	10mg/m ³ (TWA)	NA	NA

NE=Not established; NA=Not applicable.

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • 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 IN EYES:	<ul style="list-style-type: none"> • Hold eye open and rinse slowly and gently with water for 15 to 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.
<p>Have the product container or label with you when calling a poison control center or doctor, or going for treatment. <u>For information on this product, contact the National Pesticide Information Center, 1-800-858-7378, Monday-Friday, 7:30 AM-3:30 PM PST. You may also contact the National Poison Control Center, 1-800-222-1222, day or night. FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.</u></p>	

5. FIRE FIGHTING MEASURES

FLASH POINT: > 200°F (>93.3°C)

FLAMMABLE LIMITS: NA

EXTINGUISHING MEDIA: Water spray, CO₂, foam, dry chemical.

UNUSUAL FIRE, EXPLOSION HAZARDS: Traces of the substances/groups of substances mentioned can be released in case of fire. This product may burn at a very high temperature but not ignite readily.

FIRE-FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus and turn-out gear. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area and equipment until decontaminated. Water runoff can cause environmental damage, contain firefighting water.

HAZARDOUS DECOMPOSITION PRODUCTS: Product can decompose if heated to form toxic gases.

6. ACCIDENTAL RELEASE MEASURES

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ACTION TO TAKE FOR SPILLS/LEAKS: Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment. Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

CLEANUP: Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Carefully open containers and after partial use close container tightly. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a cool, clean, dry place. Do not store at temperatures exceeding 120°C or at temperatures below 32°F.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

HAND PROTECTION: Chemical-resistant gloves such as butyl rubber > 14 mils, natural rubber > 14 mils, neoprene rubber > 14 mils, or nitrile rubber > 14 mils.

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

SKIN PROTECTION: Long-sleeved shirt and long pants. Shoes plus socks. Chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

RESPIRATOR REQUIREMENTS: For most conditions, no respiratory protection required. However, if handling without sufficient ventilation, use NIOSH approved air-purifying respirator with any N, P or R95 class filter and an organic vapor cartridge.

ADDITIONAL PROTECTIVE MEASURES:

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

USER SAFETY RECOMMENDATIONS:

Users Should:

- Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. Discard clothing

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

EXPOSURE GUIDELINES: Refer to Section 3.

ENGINEERING CONTROLS: Refer to product label. Provide local exhaust ventilation. Minimize airborne concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Chocolate brown viscous liquid

ODOR: Musky

pH: 6.9

FLASH POINT: 200°F (>93.3°C)

DENSITY: 9.61 lbs/gal

VISCOSITY: 1640 cps @ 20 rpm (RVT, #2 spindle)

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Incompatible with strong oxidizing agents: bases and acids

HAZARDOUS DECOMPOSITION PRODUCTS: Product can decompose if heated to form toxic gases.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD₅₀ (Rat): > 1,750 mg/kg

Acute Dermal LD₅₀ (Rat): > 5,000 mg/kg

Acute Inhalation LC₅₀ (Rat): > 2.03 mg/L/4 hr

Eye Irritation (Rabbit): Minimally irritating

Skin Irritation (Rabbit): Slightly irritating

Dermal Sensitization: Not a skin sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

SUBCHRONIC TOXICITY:

Thiophanate-methyl : Repeated overexposure may cause mild anemia and affect the liver and thyroid.

Iprodione: Repeated overexposure may cause effects in the liver, adrenal, ovary and/or testes.

REPRODUCTIVE TOXICITY: No effects observed in multi-generation studies in rats.

DEVELOPMENTAL EFFECTS:

Thiophanate-methyl: In a rabbit study, slight skeletal variations and decreased fetal weights were observed at doses that were also toxic to mother animals.

Iprodione: Not a primary developmental toxicant as only minor delays or variations in fetal development were observed at doses that caused maternal toxicity.

MUTAGENICITY:

Thiophanate-methyl: There are some positive and some negative studies, but the weight of evidence is that thiophanate-methyl is not mutagenic.

Iprodione: No evidence of effects during *in vitro* or *in vivo* studies.

CARCINOGENICITY/CHRONIC EFFECTS:

Thiophanate-methyl: Prolonged overexposure may affect the liver and thyroid. Produced dose-dependent increases in benign liver tumors in mice and thyroid tumors in rats.

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Iprodione: Prolonged overexposure can cause effects to liver, kidneys, and reproductive system. Produced benign testicular tumors in rats and benign liver and ovary tumors in mice when tested at a maximum tolerated dose.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This chemical can contaminate surface waters through aerial and ground spray applications. Under some conditions, it may also have a high potential for runoff into surface water after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface water with vegetated filter strips, and areas overlaying file drainage systems that drain to surface water.

This product is toxic to invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Cover, incorporate, or cleanup spills. Do not contaminate water when disposing of equipment washwater or rinsate.

ECOTOXICITY:

Data based on Thiophanate-methyl Technical:

LC₅₀ (96h) Rainbow Trout: 8.3 ppm

LC₅₀ (96h) Bluegill Sunfish: >41 ppm

EC₅₀ (48h) Daphnia: 5.4 ppm

LC₅₀ (96h) Mysid: 1.1 ppm

8-day Dietary LC₅₀ Bobwhite Quail: > 10,000 ppm

Oral LD₅₀ Mallard Duck: 4,640 mg/kg

Contact LD₅₀ (48h) Honey Bee: > 100 µg/bee

Data based on Iprodione Technical:

LC₅₀ (96h) Rainbow Trout: 4.1 ppm

LC₅₀ (96h) Bluegill Sunfish: > 3.7 ppm

EC₅₀ (48h) Daphnia: 0.24 ppm

LC₅₀ (96h) Mysid: 0.68 ppm

8-day Dietary LC₅₀ Bobwhite Quail: > 5,620 ppm

Oral LD₅₀ Bobwhite Duck: > 2,000 mg/kg

Oral LD₅₀ Mallard Duck: 10,437 mg/kg

8-day Dietary LC₅₀ Mallard Duck: > 5,620 ppm

Contact LD₅₀ (48h) Honey Bee: > 120 µg/bee

ENVIRONMENTAL FATE: Thiophanate-methyl degrades primarily to MBC whether on foliage, in soil or in water in a matter of days. Both photolysis and hydrolysis are important routes of degradation. MBC is microbially degraded, but stable to aqueous photodegradation, stable to hydrolysis at pH values ranging from 5 to 7 and stable to soil photolysis. Metabolism under aerobic and anaerobic conditions in both soil and water proceeds at a slow rate. Under application conditions, average half-lives are about 20 to 50 days, but may be as short as a few days with repeated use.

The major routes of dissipation for iprodione are hydrolysis in neutral and alkaline environments and microbial degradation under both aerobic and anaerobic conditions. Soil half-lives range from 7 to > 60 days and the average soil half-life is 14 days. Degradation rates vary with soil acidity, soil clay contents and history of the soil fungicide treatment. Iprodione is slightly soluble and moderately to well absorbed by most soils.

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13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law and may contaminate groundwater. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for Guidance.

CONTAINER DISPOSAL: Empty containers retain vapor and product residues. Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Packaging < 5 gallons : Not regulated

Packaging > 5 gallons and < 119 gallons : UN3082, Environmentally hazardous substances, liquid, N.O.S. (Thiophanate-methyl), 9, PG III, RQ

Packaging ≥ 119 gallons : UN3082, Environmentally hazardous substances, liquid, N.O.S. (Thiophanate-methyl), 9, PG III, Marine Pollutant, RQ

INTERNATIONAL TRANSPORTATION:

IMO (vessel): UN3082, Environmentally hazardous substances, liquid, N.O.S. (Thiophanate-methyl), 9, PGIII, Marine pollutant

IATA (air): Not regulated

15. REGULATORY INFORMATION

FIFRA 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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing. Wear protective eyewear such as goggles or safety glasses. Remove and wash contaminated clothing before reuse.

SARA TITLE III CLASSIFICATION:

Section 302: Not applicable.

Section 311/312: Acute health hazard (immediate)

Chronic health hazard (delayed)

Section 313: Thiophanate-methyl (CAS No. 23564-05-8) (19.65%)

CA PROPOSITION 65: Not applicable.

CERCLA RQ: Thiophanate-methyl (RQ 10 lbs.) = 5 gallons product

RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

HAZARD RATINGS	NFPA	HMIS		
HEALTH:	1	1	0	MINIMAL

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FLAMMABILITY:	1	1	1	SLIGHT
REACTIVITY:	0	0	2	MODERATE
			3	HIGH
			4	SEVERE

MSDS DATE: Draft 8-1-2013

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty of any kind, expressed or implied, is made with respect to the information contained herein.