

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME:	FORMULA 314-T
PRODUCT USE:	BIOCIDE
RESTRICTIONS ON USE:	Refer to label, available technical information, and other appropriate sections of this SDS.
UN NUMBER:	UN3085
PROPER SHIPPING NAME:	UN3085, OXIDIZING SOLID, CORROSIVE, N.O.S. (BROMO-CHLORO-DIMETHYLHYDANTOIN), 5.1(8), PG III, MARINE POLLUTANT
MANUFACTURER'S NAME:	Garratt-Callahan Company
ADDRESS:	50 Ingold Road, Burlingame, CA 94010-2206
EMERGENCY PHONE:	North America: CHEMTREC: 1-800-424-9300 Outside North America: +1-703-527-3887
BUSINESS PHONE:	Product Information: 650-697-5811
SDS NUMBER:	SD3314
DATE OF REVISION:	12/11/2024

SECTION 2 - HAZARDS IDENTIFICATION

SIGNAL WORD: DANGER

HAZARD STATEMENT:

H272: May intensify fire; oxidizer. 3
H302: Harmful if swallowed. 4
H314: Causes severe skin burns and eye damage. 1C
H317: May cause an allergic reaction.
H400: Very toxic to aquatic life. 1



PRECAUTIONARY STATEMENTS: (PREVENTION)

P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P103: Read label before use.
P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking.
P220: Keep/Store away from clothing/combustible materials.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P264: Wash all exposed skin/hair thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	3	Hazard Scale 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe *=Chronic hazard
FLAMMABILITY HAZARD (RED)	1	
PHYSICAL HAZARD (YELLOW)	1	
PERSONAL PROTECTION	C	

**NFPA RATING
FLAMMABILITY**



SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS#	EC#	ICSC#	WT %
I-BROMO-3-CHLORO-5,5-DIMETHYL-HYDANTOIN	16079-88-2	240-230-0	NE	96

SECTION 4 - FIRST AID MEASURES

Exposed individuals must be taken for medical attention if any adverse effect occurs. Take a copy of this SDS to the health professional with the individual.

DANGER: May intensify fire; oxidizer. Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic reaction. Very toxic to aquatic life. Also refer to Section 11 for symptoms, effects, and likely routes of exposure for this product.

TARGET ORGANS:

ACUTE: irritation of skin, eyes, respiratory and gastrointestinal systems.

CHRONIC: irritation of skin, eyes, respiratory and gastrointestinal systems.

SKIN EXPOSURE: P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. P302+P352: IF ON SKIN: Wash with soap and water. Minimum flushing time is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate the eyes. P362+P364: Take off contaminated clothing and wash before reuse. P332+P313: If skin irritation occurs: Get medical advice/attention.

EYE EXPOSURE: P305+P351+P338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. Use sufficient force to open the eyelids. Have the exposed individual "roll" their eyes. Minimum flushing time is for 15 minutes. P310: Immediately call a POISON CENTER or doctor/physician.

INHALATION: P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P310: Immediately call a POISON CENTER or doctor/physician.

INGESTION: P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Never induce vomiting or give diluents (milk or water) by mouth to someone who is unconscious, having convulsions, or unable to swallow. P310: Immediately call a POISON CENTER or doctor/physician.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin and respiratory disorders, as well as conditions involving the "Target Organs" may be aggravated by prolonged exposures to this product. Exposed individual must seek immediate medical attention if any adverse effect occurs.

NOTES TO PHYSICIAN: Treat symptoms as demonstrated by signs and distress in the patient.

SECTION 5 - FIRE FIGHTING MEASURES

SUITABLE (AND UNSUITABLE) EXTINGUISHING MATERIALS:

P370+P378: In case of fire: Use water spray, fog or mist. Alcohol-resistant foam. DO NOT use CO2 or dry chemicals,

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Oxidizing material. Toxic gases/vapours/fumes of: Bromine. Chlorine. Oxides of the following substances: Carbon. Nitrogen. Thermal decomposition or combustion products may include the following substances: Toxic gases or vapours.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS:

Firefighters should wear fully protective clothing (chemical impermeable, fully encapsulated suit) and positive pressure self-contained breathing apparatus. Do not release run off from fire control methods to sewer or waterways. Move containers from fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, ENVIRONMENTAL PRECAUTIONS AND EMERGENCY PROCEDURES.

WARNING: Any container expansion or rounding indicates pressure build-up. Use extreme caution. When opening, release pressure slowly through opening.

SPILL AND LEAK RESPONSE: Uncontrolled releases should be responded to by appropriately trained personnel using pre-planned procedures. Proper protective equipment should be used, refer to Section 8 - exposure controls. P273: Avoid release to the environment.

Small Spill: Mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. P391: Collect spillage.

Large Spill: Restrict access to the area. Provide adequate protective equipment and ventilation. Stop leak if without risk. Remove chemicals which can react with the spilled material. Add dry inert material to contain and absorb spilled material. Prevent entry into surface waters, sewers, basements or confined areas, dike if needed. Avoid generation of dust. Avoid contact with water. Ensure that exposure to product is not at a concentration exceeding regulatory limits. Decontaminate the area thoroughly. Decontaminate all response equipment with soapy water before returning to service. Place all spill residue in a suitable container and seal. P391: Collect spillage.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Keep out of reach of children. All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. As with all chemicals, avoid getting this product ON YOU or IN YOU. Avoid direct or prolonged contact with skin or eyes. Do not ingest. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors, dusts or mists generated by this product. Use in a well-ventilated location. Remove contaminated clothing immediately. Use only as directed. Refer to Section 8 for exposure controls. P210: Keep away from heat/sparks/open flames/hot surfaces - No smoking. P220: Keep/Store away from clothing/combustible materials. P273: Avoid release to the environment.

CONDITIONS FOR SAFE STORAGE: Containers of this product must be properly labeled. Storage areas of this product should be clearly identified, well-illuminated, clear of obstruction and accessible only to trained and authorized personnel. Store containers in a clean, cool, well ventilated, dry location, away from direct sunlight, away from incompatible materials at temperatures between 50°F (10°C) - 100°F (37°C). Keep container tightly closed when not in use. Avoid spilling, skin and eye contact. Avoid contact with acids, moisture or combustible materials. Keep away from heat, sparks and open flames. P405: Store locked up. Do not ingest. Do not breathe vapor mist. Wash hands after handling. Refer to Section 10 for incompatibilities.

SECTION 8 - EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Eyewash/safety shower station is recommended to be available near where this product is used/stored.

EXPOSURE LIMITS/GUIDELINES:

EXPOSURE LIMITS IN AIR

CHEMICAL NAME	CAS#	ACGIH TLV		OSHA PEL	OTHER
		TWA	STEL	TWA	
I-BROMO-3-CHLORO-5,5-DIMETHYL-HYDANTOIN	16079-88-2	NE	NE	NE	N/A

NE = Not Established

INGESTION: P264: Wash all exposed skin/hair thoroughly after handling. P270: Do not eat, drink or smoke when using this product.

RESPIRATORY PROTECTION: P260: Do not breathe dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. Air-purifying respirators with dust/mist/fume/spray filters are recommended if operations may produce dusts, mists or sprays from this product with concentrations at or above levels posted above.

EYE PROTECTION: P264: Wash all exposed skin/hair thoroughly after handling. P280: Wear protective gloves/protective clothing/eye protection/face protection. Wear chemical safety goggles or safety glasses with side shields. A face shield may also be necessary for splash protection.

SKIN PROTECTION: P264: Wash all exposed skin/hair thoroughly after handling. P272: Contaminated work clothing should not be allowed out of the workplace. P280: Wear protective gloves/protective clothing/eye protection/face protection. Use chemically-resistant gloves and skin protection, when handling this product. Use body protection appropriate for task (e.g., lab coat, overalls).

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE and COLOR:	White to off-white tablet	VAPOR PRESSURE, mm Hg @ 20°C:	0.0038 Pa @25°C
ODOR :	Slight Halogen	VAPOR DENSITY (Air=1):	Not applicable
ODOR THRESHOLD:	Not established	RELATIVE DENSITY@20°C (water=1):	Not applicable
pH:	3.5 @ 0.15% (diluted solution)	SOLUBILITY IN WATER:	0.15 @°C slightly soluble in water
MELTING/FREEZING POINT:	156-162°C	PARTITION COEFFICIENT(n-octanol/water):	
BOILING POINT:	Not applicable	AUTOIGNITION TEMPERATURE:	Not established
FLASHPOINT:	Not established	DECOMPOSITION TEMPERATURE:	Not established
EVAPORATION RATE (n-BuAc=1):	Not applicable	VISCOSITY:	Not applicable
FLAMMABILITY (SOLID/GAS):	Not established	VOLATILE ORGANIC COMPOUNDS (%):	None
FLAMMABLE LIMITS (in air by volume, %)	Not established		

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: Material has oxidizing properties.

STABILITY: Stable at normal ambient temperatures. Avoid the following conditions: Moisture.

POSSIBILITY OF HAZARDOUS

REACTIONS: Will not polymerize.

CONDITIONS TO AVOID: Generates toxic gas in contact with acid. Avoid heat, flames and other sources of ignition. Avoid excessive heat for prolonged periods of time.

INCOMPATIBLE MATERIALS: Strong acids. Strong alkalis. Strong reducing agents.

HAZARDOUS DECOMPOSITION

PRODUCTS: Toxic gases/vapors/fumes of: Hydrogen bromide (HBr). Bromine. Hydrogen chloride (HCl). Chlorine. Oxides of the following substances: Carbon. Nitrogen.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICAL EFFECTS: There is no evidence that the product can cause cancer.

LIKELY ROUTES OF EXPOSURE: Skin and/or eye contact. Ingestion. Inhalation.

RELATED SYMPTOMS: Skin and/or eye contact. Ingestion. Inhalation.

DELAYED/IMMEDIATE/CHRONIC

EFFECTS FROM SHORT AND

LONG TERM EXPOSURES: Inhalation: May cause respiratory system irritation. Ingestion: Harmful if swallowed. Skin contact: Causes burns. May cause sensitisation by skin contact. Eye contact: Causes burns. Acute and chronic health hazards: This product is corrosive.

NUMERICAL MEASURES OF

TOXICITY: Oral: LD50: rats, 578 mg/kg
Dermal: LD50: rabbits, 2000mg/kg
Ames test: Negative

CARCINOGENICITY: None of the components of this product are listed by the NTP, IARC, or regulated by OSHA as carcinogens.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ECOTOXICITY: This product contains a substance which is very toxic to aquatic organisms.

Acute toxicity - fish:

LC50, 96 hours: 0.87 mg/l, *Onchorhynchus mykiss* (Rainbow trout)

Acute toxicity - aquatic:

EC50, 48 hours: 0.46 mg/l, *Daphnia magna*

Acute toxicity:

LC50, 96 hours, 640 American oyster mg/l

PERSISTENCE AND DEGRADABILITY: Halogens will dissociate in water leaving DMH. DMH is really biodegradable in a CO2 Evolution study and passes the 10-day window criteria. DMH has also been shown to be rapidly degraded in a water/sediment system.

BIOLOGICAL ACCUMULATION POTENTIAL: Material is expected to present a low bioaccumulation potential.

MOBILITY IN SOIL: No data available for this product.

OTHER ADVERSE EFFECTS (i.e., hazardous to the ozone layer): The product contains a substance which is very toxic to

aquatic organisms.

Environmental Hazards:

This pesticide is toxic to fish and aquatic organisms. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product into sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

BIOLOGICAL EXPOSURE INDICES: Currently, Biological Exposure Indices (BEIs) have not been determined for the components of this product.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL: Thoroughly drain/empty containers and offer for recycling. Refer to Section 8 for exposure controls - personal protection. P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14 - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME

DOT: UN3085, OXIDIZING SOLID, CORROSIVE, N.O.S. (BROMO-CHLORO-DIMETHYLHYDANTOIN), 5.1(8), PG III, MARINE POLLUTANT Emergency Response Guidebook, Guide No.: 140 Passenger Aircraft Qty: 25 kg Cargo Aircraft Qty: 100 kg

IMDG/IMO: UN3085, OXIDIZING SOLID, CORROSIVE, N.O.S. (BROMO-CHLORO-DIMETHYLHYDANTOIN), 5.1(8), PG III, MARINE POLLUTANT

IATA/ICAO: UN3085, OXIDIZING SOLID, CORROSIVE, N.O.S. (BROMO-CHLORO-DIMETHYLHYDANTOIN), 5.1(8), PG III, MARINE POLLUTANT

ENVIRONMENTAL HAZARDS

(i.e., MARINE POLLUTANT): Yes

TRANSPORT IN BULK (according to annex II marpol 73/78 and the IBC code): Not applicable

SPECIAL PRECAUTIONS FOR USER: None known

PRODUCT REQUIRES OXIDIZER AND CORROSIVE LABEL AND MARINE POLLUTANT MARKING.



SECTION 15 - REGULATORY INFORMATION

United States and International Regulations

United States Regulations: U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting as listed below, requirements of Sections 302, 304, and 313 of Title of the Superfund Amendments and Reauthorization Act:

CHEMICAL NAME

I-BROMO-3-CHLORO-5,5-DIMETHYL-HYDANTOIN	SARA 302 (40CFR 355, APPENDIX A) - NO
	SARA 304 (40CFR TABLE 302.4) - NO
	SARA 313 (40CFR 372.65) - NO

U.S. Regulations

U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Not listed.

U.S. TSCA INVENTORY STATUS: The components of this product are exempt from the TSCA Inventory as this is a pesticide.

SARA TITLE 311/312 HAZARD CATEGORY: ACUTE: YES CHRONIC: NO FIRE: YES REACTIVITY: YES PRESSURE: NO

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): No component of this product is on the Proposition 65 list.

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

DANGER. CORROSIVE. Causes irreversible eye damage and skin burns. Harmful if swallowed. Irritating to nose and throat. Do not get in eyes, on skin, or on clothing. Wear protective eyewear (goggles, face shield, or safety glasses). Wear protective clothing and rubber gloves when handling this product. Avoid breathing dust and fumes. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

International Regulations

CANADIAN REGULATIONS: CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are on the DSL or NDSL Inventories or are exempt from listing. CANADIAN WHMIS CLASSIFICATION: Not listed.

SECTION 16 - OTHER INFORMATION

PREPARED BY: GARRATT CALLAHAN

DATE OF REVISION: 12/11/2024 Supercedes: 03/07/2024

Formula 314-T is EPA-registered; with EPA Reg. No. 83451-4-8540. Refer to the approved label for details. Formula 314-T is registered with the NSF to the NSF International Registration Guidelines for Proprietary Substances and Nonfood Compounds for category codes G5, G7; with NSF Reg. No. 113139.

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