

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME:	FORMULA 12-L
PRODUCT USE:	CLOSED SYSTEM INHIBITOR
RESTRICTIONS ON USE:	Refer to label, available technical information, and other appropriate sections of this SDS.
UN NUMBER:	UN2922
PROPER SHIPPING NAME:	UN2922, CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM METABORATE TETRAHYDRATE, SODIUM NITRITE) 8, 6.1, II
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:	SD6012
DATE OF REVISION:	11/20/2023

SECTION 2 - HAZARDS IDENTIFICATION

SIGNAL WORD: DANGER

HAZARD STATEMENT:

H301: Toxic if swallowed. 3
H315: Causes skin irritation. 2
H318: Causes serious eye damage. 1
H361: Suspected of damaging fertility or the unborn child. 2
H402: Harmful to aquatic life. 3



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.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking.
P220: Keep away from clothing and combustible materials.
P264: Wash all exposed skin/hair thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
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)	0	
PHYSICAL HAZARD (YELLOW)	1	
PERSONAL PROTECTION	D	

**NFPA RATING
FLAMMABILITY**



SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients</u>	<u>CAS#</u>	<u>EC#</u>	<u>ICSC#</u>	<u>WT %</u>
SODIUM NITRITE	7632-00-0	231-555-9	1120	20 - 30
SODIUM METABORATE TETRAHYDRATE	10555-76-7	600-663-1	NA	<10
SODIUM TOLYLTRIAZOLE	64665-57-2	265-004-9	1091	<2

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. Toxic if swallowed. Causes skin irritation. Causes serious eye damage. Suspected of damaging fertility or the unborn child. Harmful to aquatic life. Also refer to Section 11 for symptoms, effects, and likely routes of exposure for this product. P308+P313: IF exposed or concerned: Get medical advice/attention.

TARGET ORGANS:

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

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

SKIN EXPOSURE: P302+P352: IF ON SKIN: Wash with soap and water. P362+P364: Take off contaminated clothing and wash before reuse. Minimum flushing time is for 15 minutes. 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+P312: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

INGESTION: P301+310: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mouth. Never induce vomiting or give diluents (milk or water) by mouth to someone who is unconscious, having convulsions, or unable to swallow.

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 for extinction measures that are appropriate to local circumstances and the surrounding environment.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

Nitrites are oxidizers, and in contact with readily oxidized materials will stimulate combustion at high temperatures. Residue from this product may supply oxygen for a fire. Heated product may emit toxic oxides of nitrogen and boron.

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.

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. 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, hot surface, sparks, open flames and other ignition sources. No smoking. P220: Keep away from clothing and combustible materials. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. 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. P405: Store locked up. Do not ingest. Do not breathe vapor or 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

<u>CHEMICAL NAME</u>	<u>CAS#</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	<u>OTHER</u>
		<u>TWA</u>	<u>STEL</u>	<u>TWA</u>	
SODIUM NITRITE	7632-00-0	NE	NE	NE	N/A
SODIUM METABORATE TETRAHYDRATE	10555-76-7	NE	NE	NE	N/A
SODIUM TOLYLTRIAZOLE	64665-57-2	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: Do not breathe dust/fume/gas/mist/vapours/spray. 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: Wash all exposed skin/hair thoroughly after handling. 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. 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:	Clear yellow liquid	VAPOR PRESSURE, mm Hg @ 20°C:	Not determined
ODOR :	Sweet organic	VAPOR DENSITY (Air=1):	Not applicable
ODOR THRESHOLD:	Not established	RELATIVE DENSITY@20°C (water=1):	1.26 - 1.28
pH:	12.5 - 14.0	SOLUBILITY IN WATER:	Complete
MELTING/FREEZING POINT:	Not Established	PARTITION COEFFICIENT(n-octanol/water):	
BOILING POINT:	> 212°F (100°C)	AUTOIGNITION TEMPERATURE:	Not applicable
FLASHPOINT:	Non-flammable	DECOMPOSITION TEMPERATURE:	Not established
EVAPORATION RATE (n-BuAc=1):	Not established	VISCOSITY:	Not established
FLAMMABILITY (SOLID/GAS):	Not applicable	VOLATILE ORGANIC COMPOUNDS (%):	None
FLAMMABLE LIMITS (in air by volume, %)	Not applicable		

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: Product is not reactive under standard ambient temperature and pressure.

STABILITY: Stable under normal condition of use and storage.

POSSIBILITY OF HAZARDOUS

REACTIONS: None known.

CONDITIONS TO AVOID: Do not combine with acidic compounds; a violent reaction will occur forming toxic vapors of nitrogen and sulfur oxides.

INCOMPATIBLE MATERIALS: Acids, amines, and oxidizing agents.

HAZARDOUS DECOMPOSITION

PRODUCTS: Thermal decomposition may yield oxides of carbon, nitrogen, and boron.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICAL EFFECTS: No data available for this product.

LIKELY ROUTES OF EXPOSURE: Skin, eye contact and inhalation.

RELATED SYMPTOMS: Skin, eye, respiratory and gastrointestinal irritation. May be harmful if swallowed.

DELAYED/IMMEDIATE/CHRONIC

EFFECTS FROM SHORT AND

LONG TERM EXPOSURES: Skin, eye, respiratory and gastrointestinal irritation. May be harmful if swallowed.

NUMERICAL MEASURES OF

TOXICITY: Oral LD50 : > 255 mg/kg (rat)

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:

Water Flea 48hr LC50 : 18.6 ppm

Fathead Minnow 96hr LC50 : 85.2 ppm

PERSISTENCE AND DEGRADABILITY: No data available for this product.

BIOLOGICAL ACCUMULATION POTENTIAL: No data available for this product.

MOBILITY IN SOIL: No data available for this product.

OTHER ADVERSE EFFECTS (i.e., hazardous to the ozone layer): No data available for this product.

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: UN2922, CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM METABORATE TETRAHYDRATE, SODIUM NITRITE) 8, 6.1, II

Emergency Response Guidebook, Guide No.: 154
Passenger Aircraft Qty: 1L
Cargo Aircraft Qty: 30L

IMDG/IMO: UN2922, CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM METABORATE TETRAHYDRATE, SODIUM NITRITE) 8, 6.1, II

IATA/ICAO: UN2922, CORROSIVE LIQUID, TOXIC, N.O.S. (SODIUM METABORATE TETRAHYDRATE, SODIUM NITRITE) 8, 6.1, II

RQ FOR SIZE 55 GAL AND TOTES ARE RQ



ENVIRONMENTAL HAZARDS

(i.e., MARINE POLLUTANT): None known.

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

SPECIAL PRECAUTIONS FOR USER: None known.

PRODUCT REQUIRES CORROSIVE LABEL AND A TOXIC LABEL

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

SODIUM NITRITE	SARA 302 (40 CFR 355, Appendix A) – NO SARA 304 (40 CFR Table 302.4) – YES SARA 313 (40 CFR 372.65) - YES
SODIUM METABORATE TETRAHYDRATE	SARA 302 (40 CFR 355, Appendix A) – NO SARA 304 (40 CFR Table 302.4) – NO SARA 313 (40 CFR 372.65) -NO
SODIUM TOLYLTRIAZOLE	SARA 302 (40 CFR 355, Appendix A) – NO SARA 304 (40 CFR Table 302.4) – NO SARA 313 (40 CFR 372.65) - NO

U.S. Regulations

U.S. SARA THRESHOLD PLANNING QUANTITY: There are 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): Sodium Nitrite (CAS# 7632-00-0) : 100 lbs (45.4 kg).

U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory, or are exempt.

Section 311/312 Hazard Category: Acute Health: YES CHRONIC: YES Fire: NO Reactive: NO Sudden Release of Pressure: NO

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

International Regulations

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components Sodium Nitrite (CAS# 7632-00-01) and Sodium Tolyltriazole (CAS# 64665-57-2) of this product are on the DSL or NDSL Inventories or are exempt from listing. The component Sodium Metaborate Tolyltriazole (CAS# 1055-76-7) is not on the DSL nor NDSL Inventories nor is exempt from listing.

CANADIAN WHMIS CLASSIFICATION: None

SECTION 16 - OTHER INFORMATION

PREPARED BY: GARRATT CALLAHAN

DATE OF REVISION: 11/20/2023 Supercedes: 10/18/2018

This product has been certified by the Orthodox Union as Kosher Pareve under the UK ID number of OUV3-5994217 when prepared in either the Addison, Illinois or Burlingame, California facilities.

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