

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME:	FORMULA 37
PRODUCT USE:	BIOCIDE
RESTRICTIONS ON USE:	Refer to label, available technical information, and other appropriate sections of this SDS.
UN NUMBER:	3082
PROPER SHIPPING NAME:	ENVIRONMENTALLY HAZROUS SUBSTANCES, LIQUID, N.O.S. (SODIUM DIMETHYLDITHIOCARBAMATE, NABAM), 9, PGIII 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:	SD3037
DATE OF REVISION:	6/9/2015

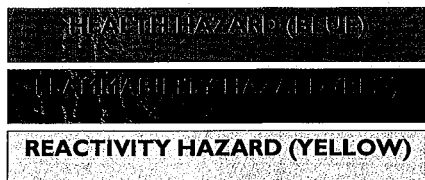
SECTION 2 - HAZARDS IDENTIFICATION**SIGNAL WORD:** DANGER**HAZARD STATEMENT:**

H303: May be harmful if swallowed.
H315: Causes skin irritation. 2
H320: Causes eye irritation. 2B
H335: May cause respiratory irritation. 3
H350: May cause cancer. 1A
H360: May damage fertility or the unborn child. 1A
H400: Very toxic to aquatic life. 1

**PRECAUTIONARY STATEMENTS: (PREVENTION)**

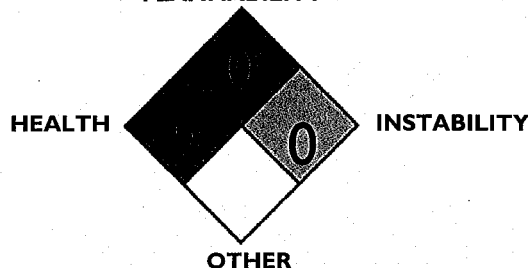
P101: If medical advice is needed, have product container or label at hand.
P102: Keep out of reach of children.
P103: Read label before use.
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P264: Wash all exposed skin/hair thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM



Hazard Scale
 0=Minimal
 1=Slight
 2=Moderate
 3=Serious
 4=Severe
 *=Chronic hazard

**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>
NABAM	142-59-6	205-547-0	187	10 - 30
SODIUM DIMETHYLDITHIOCARBAMATE	128-04-1	204-876-7	1228	10 - 30
ETHYLENE THIOUREA	96-45-7	202-506-9	1148	0.1 - 1

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. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P308+P313: IF exposed or concerned: Get medical advice/attention.

DANGER: May be harmful if swallowed. Causes skin and eye irritation. May cause respiratory irritation. May cause cancer. May damage fertility or the unborn child. 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: P302+P352: IF ON SKIN: Wash with soap and water. Minimum flushing time is for 15 minutes. P362+P364: Take off contaminated clothing and wash before reuse. P332+P313: If skin irritation occurs: Get medical advice/attention. Call a POISON CENTER or doctor/physician if you feel unwell.

EYE EXPOSURE: P305+P351+P338: IF IN EYES: Rinse cautiously 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. P337+P313: If eye irritation persists get medical advice/attention.

INHALATION: P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor/physician if you feel unwell.

INGESTION: 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. P312: Call a POISON CENTER or doctor/physician if you feel unwell.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Skin, eye 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:

Dry chemical powder, water spray, fog or foam. Do not use water jet.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

May be combustible at high temperature.

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.

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. P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood.

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 40°F (4.4°C) - 100°F (37°C). Protect from freezing. Keep container tightly closed when not in use. P405: Store locked up. Do not ingest. Do not breathe vapor mist. Wash hands after handling. Refer to Section 10 for incompatibilities. P403+233: Store in a well ventilated place. Keep container tightly closed.

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	
NABAM	142-59-6	NE	NE	NE	N/A
SODIUM DIMETHYLDITHIOCARBAMATE	128-04-1	NE	NE	NE	N/A
ETHYLENE THIOUREA	96-45-7	NE	NE	NE	N/A

NE = Not Established

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

RESPIRATORY PROTECTION: P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P271: 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. 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:	Yellow-green liquid	VAPOR PRESSURE, mm Hg @ 20°C :	Not established
ODOR :	Sulfurous	VAPOR DENSITY (Air=1):	>1 (Air=1)
ODOR THRESHOLD:	Not established	RELATIVE DENSITY@20°C (water=1):	1
pH:	11	SOLUBILITY IN WATER:	Easily soluble in hot water, methanol, acetone. Partially soluble in cold water.
MELTING/FREEZING POINT:	0°C (32°F)	PARTITION COEFFICIENT(n-octanol/water)	Not established
BOILING POINT:	>100°C (212°F)	AUTOIGNITION TEMPERATURE:	Not established
FLASHPOINT:	Closed cup >93.3°C (199.9°F)	DECOMPOSITION TEMPERATURE:	Not established
EVAPORATION RATE (n-BuAc=1):	1	VISCOSITY:	Not established
FLAMMABILITY (SOLID/GAS):	Not applicable	VOLATILE ORGANIC COMPOUNDS (%):	Not established
FLAMMABLE LIMITS (in air by volume, %):	Not established		

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: Contact with acids.

INCOMPATIBLE MATERIALS: Reactive with oxidizing agents, metals, acids.

HAZARDOUS

DECOMPOSITION PRODUCTS: When heated to decomposition may release oxides or sulfur, nitrogen, carbon. Hydrogen sulfide may be evolved.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICAL EFFECTS:

NABAM

Oral/LD50/rat: 395 mg/kg

Oral/LD50/mouse: 580 mg/kg

SODIUM DIMETHYLDITHIOCARBAMATE

Oral/LD50/rabbit: 300 mg/kg

Oral/LD50/mouse: 1500 mg/kg

ETHYLENE THIOUREA

Oral/LD50/rat: 1832 mg/kg

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: Not established for this product.

CARCINOGENICITY: The following components have been classified as to their carcinogenicity: Ethylene Thiourea, NIOSH, NTP, developmental toxicity and is a reproductive system/toxin/female and male. Other components not classified.

SECTION 12 - ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

ECOTOXICITY:

SODIUM DIMETHYLDITHIOCARBAMATE

Daphnia magna: EC50/48hr/0.052 mg/l
Oncorhynchus mykiss: LC50/96hr/1.7 mg/l
Poecilia reticulata: LC50/96hr/2.6 mg/l
Lepomis macrochirus: LC50/96hr/3.44 mg/l
Oncorhynchus mykiss: LC50/96hr/6.7 mg/l
Lepomis macrochirus: LC50/96hr/38.5 mg/l

DISODIUM ETHYLENEBISDITHIOCARBAMATE

Daphnia magna: EC50/48hr/5.6 mg/l
Oncorhynchus mykiss: LC50/96hr/0.7 mg/l
Oncorhynchus mykiss: LC50/96hr/1.73 mg/l
Lepomis macrochirus: LC50/96hr/3.44 mg/l
Poecilia reticulata: LC50/96hr/5.8 mg/l
Oncorhynchus mykiss: LC50/96hr/11 mg/l

ETHYLENE THIOUREA Poecilia reticulata: LC50/96hr/7500 mg/l

PERSISTANCE AND DEGRADABILITY: Degradation yields carbon disulphide and amines.

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.

Environmental Hazards:

This pesticide is toxic to fish. Do not apply (or use) in estuarine oil fields where drilling fluids (muds) are discharged in the surface water. Do not contaminate water by cleaning of equipment or disposal of wastes. 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 to 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: P501: Dispose of contents/container in accordance with local/regional/national/international regulations. Rinse empty containers with water and use the rinse water to prepare the working solution. Refer to Section 8 for exposure controls - personal protection.

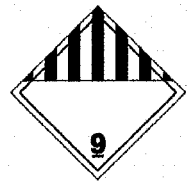
SECTION 14 - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME

DOT: UN3082 ENVIRONMENTALLY HAZRDOUS SUBSTANCES, LIQUID,
N.O.S. (SODIUM DIMETHYLDITHIOCARBAMATE, NABAM),
9, PGIII MARINE POLLUTANT
Emergency Response Guidebook, Guide No.: 171
Passenger Aircraft Qty: No limit
Cargo Aircraft Qty: No limit

IMDG/IMO: UN3082 ENVIRONMENTALLY HAZRDOUS SUBSTANCES, LIQUID,
N.O.S. (SODIUM DIMETHYLDITHIOCARBAMATE, NABAM),
9, PGIII MARINE POLLUTANT

IATA/ICAO: UN3082 ENVIRONMENTALLY HAZRDOUS SUBSTANCES, LIQUID,
N.O.S. (SODIUM DIMETHYLDITHIOCARBAMATE, NABAM),
9, PGIII MARINE POLLUTANT



ENVIRONMENTAL HAZARDS

(i.e., **MARINE POLLUTANT**): Marine Pollutant.

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

SPECIAL PRECAUTIONS FOR USER: None known.

PRODUCT REQUIRES CLASS 9 LABEL AND MARINE POLLUTANT MARK

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

NABAM	SARA 302 (40 CFR 355, Appendix A) - NO SARA 304 (40 CFR Table 302.4) - YES SARA 313 (40 CFR 372.65) - YES
SODIUM DIMETHYLDITHIOCARBAMATE	SARA 302 (40 CFR 355, Appendix A) - NO SARA 304 (40 CFR Table 302.4) - YES SARA 313 (40 CFR 372.65) - YES
ETHYLENE THIOUREA	SARA 302 (40 CFR 355, Appendix A) - NO SARA 304 (40 CFR Table 302.4) - NO SARA 313 (40 CFR 372.65) - YES

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): None

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

SARA Title 311/312, Hazard Category: Acute Health: YES; Chronic: YES; Fire: NO; Reactive: NO; Sudden Release of Pressure: NO

TSCA: This product is subject to regulation under the US Federal Fungicide, Insecticide and Rodenticide Act (FIFRA) and is therefore exempted under the US Toxic Substance Control Act(TSCA) Inventory requirements.

TSCA 5(a)2 final significant rules: No products were found.

CERCLA: Hazardous substances: ethylene thiourea: 10 lbs. (4.536 kg); ethylenediamine: 5000 lbs.(2268 kg); di-methylamine: 1000 lbs. (453.6 kg); sodium hydroxide: 1000 lbs. (453.6 kg); carbondisulphide: 100 lbs. (45.36 kg);

STATE REGULATIONS:

Pennsylvania RTK: ethylene thiourea: (special hazard, environmental hazard, generic environmentalhazard); ethylenediamine: (environmental hazard, generic environmental hazard); di-methylamine:(environmental hazard, generic environmental hazard); sodium hydroxide: (environmental hazard, generic environmental hazard); carbon disulphide: (environmental hazard, generic environmentalhazard).

Massachusetts RTK: nabam (ISO); ethylene thiourea; ethylenediamine; di-methylamine; sodiumhydroxide; carbon disulphide.

New Jersey: ethylene thiourea; ethylenediamine; di-methylamine; sodium hydroxide; carbondisulphide.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: carbamodithioic acid, dimethyl-, sodium salt; nabam (ISO); ethylene thiourea; carbon disulphide.

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:

CAUTION. Harmful if swallowed. Harmful if adsorbed through skin. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking and chewing gum, or using tobacco.

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: 6/9/2015 Supercedes: 11/4/2014

Formula 37 is EPA-registered; with EPA Reg. No. 34688-76-8540. Refer to the approved label for details.

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