

**SECTION 1 - PRODUCT IDENTIFICATION**

PRODUCT NAME: FORMULA 151  
 PRODUCT USE: BOILER WATER TREATMENT  
 RESTRICTIONS ON USE: Refer to label, available technical information, and other appropriate sections of this SDS.  
 UN NUMBER: UN 3266  
 PROPER SHIPPING NAME: UN 3266 CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S. (CONTAINS SODIUM HYDROXIDE AND SODIUM SULFITE), 8, 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: SD1951  
 DATE OF REVISION: 4/23/2018

**SECTION 2 - HAZARDS IDENTIFICATION**

SIGNAL WORD: WARNING

**HAZARD STATEMENT:**

- H290: May be corrosive to metals. 1
- H303: May be harmful if swallowed. 5
- H315: Causes skin irritation. 2
- H319: Causes serious eye irritation. 2A
- H335: May cause respiratory irritation. 3
- H361: Suspected of damaging fertility or the unborn child. 2



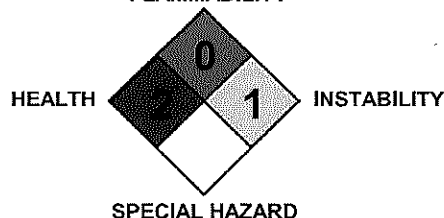
**PRECAUTIONARY STATEMENTS: (PREVENTION)**

- 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.
- P234: Keep only in original packaging.
- 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.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.

**HAZARDOUS MATERIAL IDENTIFICATION SYSTEM**

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

**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>
SULFUROUS ACID, SODIUM SALT (1:2)	7757-83-7	231-821-4	1200	< 8
SODIUM HYDROXIDE	1310-73-2	215-185-5	0360	2 - 5
SODIUM HEXAMETAPHOSPHATE	68915-31-1	272-808-3	N/A	5 - 6
DIETHYLAMINOETHANOL	100-37-8	202-845-2	0257	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.

**WARNING:** May be corrosive to metals. May be harmful if swallowed. Causes skin and serious eye irritation. May cause respiratory irritation. Suspected of damaging fertility or the unborn child. 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. 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.

**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. P337+313: 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:** P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. 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:** Product is non-flammable. Use media appropriate for the surrounding fire.

**SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:** Thermal decomposition may yield oxides of sulfur, nitrogen and carbon.

**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. P390: Absorb spillage to prevent material-damage.

**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 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 mist. Wash hands after handling. Refer to Section 10 for incompatibilities. P403+P233: Store in a well ventilated place. Keep container tightly closed. P234: Keep only in original packaging. P406: Store in corrosion resistant container with a resistant inner liner.

## 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	
SULFUROUS ACID, SODIUM SALT (1:2)	7757-83-7	NE	NE	NE	N/A
SODIUM HYDROXIDE	1310-73-2	NE	C-2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	NIOSH REL C-2 mg/m <sup>3</sup>
SODIUM HEXAMETAPHOSPHATE	68915-31-1	NE	NE	NE	N/A
DIETHYLAMINOETHANOL	100-37-8	2 ppm (skin)	NE	10 ppm or 50 mg/m <sup>3</sup> (skin)	NIOSH TWA 10 ppm or 50 mg/kg (skin)

NE = Not Established

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

**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. 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. 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:	Dark brown liquid	VAPOR PRESSURE, mm Hg @ 20°C:	Not established
ODOR :	Amine	VAPOR DENSITY (Air=1):	Not established
ODOR THRESHOLD:	Not established	RELATIVE DENSITY@20°C (water=1):	1.10 - 1.3
pH:	12.0 - 14.0	SOLUBILITY IN WATER:	Complete
MELTING/FREEZING POINT:	Not established	PARTITION COEFFICIENT(n-octanol/water):	Not established
BOILING POINT:	212°F (100°C)	AUTOIGNITION TEMPERATURE:	Not established
FLASHPOINT:	Non-flammable	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:** See incompatible materials.

**INCOMPATIBLE MATERIALS:** Strong acids.

### HAZARDOUS DECOMPOSITION

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

## 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:** Not established for this product.

**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 48 hours LC50: 6830 ppm

Fathead Minnow 96 hours LC50: >10,000 (55% survival @ 10,000 ppm)

**PERSISTANCE 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:** Rinse empty containers with water and use the rinse water to prepare the working solution. 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:** UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.  
(CONTAINS SODIUM HYDROXIDE AND SODIUM SULFITE), 8, II  
Emergency Response Guidebook, Guide No.: 154  
Passenger Aircraft Qty: 1L  
Cargo Aircraft Qty: 30L

**IMDG/IMO:** UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.  
(CONTAINS SODIUM HYDROXIDE AND SODIUM SULFITE), 8, II

**IATA/ICAO:** UN3266, CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.  
(CONTAINS SODIUM HYDROXIDE AND SODIUM SULFITE), 8, II



### 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

## 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

SULFUROUS ACID, SODIUM SALT (1:2)	SARA 302 (40CFR 355, APPENDIX A) - NO SARA 304 (40CFR TABLE 302.4) - NO SARA 313 (40CFR 372.65) - NO
SODIUM HYDROXIDE	SARA 302 (40CFR 355, APPENDIX A) - NO SARA 304 (40CFR TABLE 302.4) - YES SARA 313 (40CFR 372.65) - NO
SODIUM HEXAMETAPHOSPHATE	SARA 302 (40CFR 355, APPENDIX A) - NO SARA 304 (40CFR TABLE 302.4) - NO SARA 313 (40CFR 372.65) - NO
DIETHYLAMINOETHANOL	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):** SODIUM HYDROXIDE (CAS# 1310-73-2) 1,000 lbs (454 kg).

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

**SARA TITLE 311/312 HAZARD CATEGORY:** ACUTE: YES CHRONIC: YES FIRE: NO REACTIVITY: NO 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 of this product are on the DSL or NDSL Inventories

**CANADIAN WHMIS CLASSIFICATION:** Components of this product have the following classifications:

Sodium Hydroxide (CAS# 1310-73-2) Class E (corrosive).

DEAE (CAS# 100-37-8) Class B3, D1B (toxic), E (corrosive).

WATER TREATMENT EXPERTISE SINCE 1904

**SECTION 16 - OTHER INFORMATION**

**PREPARED BY: GARRATT CALLAHAN**

DATE OF REVISION: 4/23/2018

Supersedes: 9/7/2016

Formula 151 is registered with the NSF to the NSF International Registration Guidelines for Proprietary Substances and Nonfood Compounds for category codes G6, with NSF Reg. No. 045929.

FORMULA 151 has been certified by the Orthodox Union as Kosher Pareve under the UK ID number of OUV3-A5185A3 when prepared in either the Addison, Illinois or Burlingame, California facilities.

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