

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME: FORMULA 159
 PRODUCT USE: OXYGEN SCAVENGER
 UN NUMBER: NA
 PROPER SHIPPING NAME: NA
 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
 MSDS NUMBER: SD1559
 DATE OF REVISION: 10/17/2011

SECTION 2 - HAZARDS IDENTIFICATION

GHS LABELING AND CLASSIFICATION: This product has not been classified as defined by the Globally Harmonized System (GHS). Components of this product that have GHS hazard and precautionary statements include: Sodium bisulfite (7631-90-5).

SIGNAL WORD: WARNING

GHS HAZARD STATEMENT:
 H302: Harmful if swallowed.

GHS PREVENTATIVE STATEMENTS:
 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.
 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.

Avoid eye contact. May cause eye irritation. Avoid repeated or prolonged skin contact, inhalation of aerosol, mist, spray, fume or vapor. May cause respiratory tract and skin irritation. Wash thoroughly after handling.

TARGET ORGANS:
 ACUTE: Skin, eyes, respiratory system.
 CHRONIC: Skin, eyes, respiratory system.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

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

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients</u>	<u>CAS#</u>	<u>EC#</u>	<u>ICSC#</u>	<u>WT %</u>	<u>GHS Hazard Statement</u>
SODIUM BISULFITE	7631-90-5	231-548-0	-	20-25	H302
POTASSIUM SULFITE	10117-38-1	233-321-1	-	20-25	NOT CLASSIFIED

SECTION 4 - FIRST AID MEASURES

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

SKIN EXPOSURE: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. If this product contaminates the skin, begin decontamination with running water and soap. Minimum flushing time is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate the eyes. P363: Wash contaminated clothing before reuse. Wash clothing prior to reuse. The exposed individual must seek medical attention if any adverse effect occurs.

EYE EXPOSURE: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If vapors, mists, splashes or sprays are generated by this product and enter the eyes, open the exposed individual's eyes while under gently running water. Use sufficient force to open the eyelids. Have the exposed individual "roll" their eyes. Minimum flushing time is for 15 minutes. The exposed individual must seek immediate medical attention.

INHALATION: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If vapors, mists, dust or sprays generated by this product are inhaled, remove exposed individual to fresh air. Remove or cover gross contamination to avoid exposure to rescuers. If not breathing or if breathing is difficult, seek immediate medical attention. If trained, administer CPR or oxygen if available.

INGESTION: P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330: Rinse mouth. Routine use of this product is not expected to cause a situation which could lead to ingestion. If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT ASSISTANCE INFORMATION. Exposed individual must seek immediate medical attention. 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" (see Section 2, Hazards Identification) may be aggravated by prolonged exposures to this product. Exposed individual must seek immediate medical attention if any adverse effect occurs.

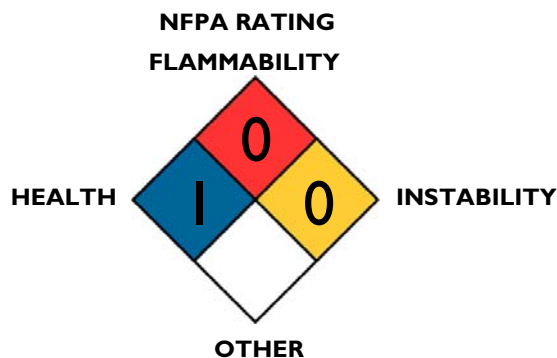
NOTES TO PHYSICIAN: Treat symptoms as demonstrated by signs and distress in the patient.

SECTION 5 - FIRE FIGHTING MEASURES

FIRE EXTINGUISHING MATERIALS: Use media appropriate for the surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Not established

SPECIAL FIRE-FIGHTING PROCEDURES: Self contained breathing apparatus may be necessary. Sodium sulfite emits SO₂ gas if heated to decomposition. Use water spray to cool nearby containers exposed to the fire.



SECTION 6 - ACCIDENTAL RELEASE MEASURES

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.

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

WORK PRACTICES AND HYGIENE PRACTICES: 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.

STORAGE AND HANDLING PRACTICES: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. 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 cool, dry location, away from direct sunlight, at temperatures between 50°F (10°C) - 100°F (37°C). Keep container tightly closed when not in use. P405: Store locked up.

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.

EXPOSURE LIMITS/GUIDELINES:

EXPOSURE LIMITS IN AIR

CHEMICAL NAME	CAS#	ACGIH TLV		OSHA PEL	OTHER
		TWA	STEL	TWA	
SODIUM BISULFITE	7631-90-5	5 mg/m ³	NE	NE	NONE
POTASSIUM SULFITE	10117-38-1	NE	NE	NE	NONE

NE = Not Established

RESPIRATORY PROTECTION: P260: 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.

EYE PROTECTION: Chemical safety goggles. A face shield is necessary if splashing is possible.

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). P270: Do not eat, drink or smoke when using this product.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE and COLOR:	Clear light yellow/water white	VAPOR PRESSURE, mm Hg @ 20°C :	Not established
ODOR :	Slight	VAPOR DENSITY (Air=1):	Not established
pH:	6.0 - 8.5	SPECIFIC GRAVITY@20°C (water=1):	1.3 - 1.4
MELTING/FREEZING POINT:		SOLUBILITY IN WATER:	High
BOILING POINT:	Not established	PARTITION COEFFICIENT(n-octanol/water)	Not established
FLASHPOINT:	Non-flammable	AUTOIGNITION TEMPERATURE:	Not established
EVAPORATION RATE (n-BuAc=1):	Not established	DECOMPOSITION TEMPERATURE:	Not established
FLAMMABLE LIMITS (in air by volume, %):	Not established	VISCOSITY:	

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY:

STABILITY: Stable

HAZARDOUS DECOMPOSITION: SO₂ (sulfur dioxide gas)

HAZARDOUS POLYMERIZATION: Will not occur

INCOMPATIBLE MATERIALS: Acids, oxidizing agents

CONDITIONS TO AVOID: Not established

SECTION 11 - TOXICOLOGICAL INFORMATION

Fish: 96 hr, LC50, Fathead Minnow, 883.9 mg/L

Daphnia: 48 hr, LC50, Daphnia Dubai, 507.7 mg/L

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

SECTION 12 - ECOLOGICAL INFORMATION

Not available at this time.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL: P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT - NOT REGULATED

ICAO/IATA - NOT REGULATED

IMO/IMDG - NOT REGULATED

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 requirements of Sections 302, 304, and 313 of Title of the Superfund Amendments and Reauthorization Act, listed below:

CHEMICAL NAME

SODIUM BISULFITE	SARA 302 (40 CFR 355, Appendix A) - NO SARA 304 (40 CFR Table 302.4) - YES SARA 313 (40 CFR 372.65) - NO
POTASSIUM SULFITE	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 no specific Threshold Planning Quantities for the components of this product. The default Federal MSDS 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 bisulfate (7631-90-5): 5000 lbs (2268 kg).

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

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

SARA Title 31 I/312, Hazard Category: Acute Health: NO; Chronic: NO; Fire: NO; Reactive: 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: Not Classified

This material or its components are listed (or considered as having been notified) on the European Inventory of Existing Chemical Substances (EINECS).

SECTION 16 - OTHER INFORMATION

FORMULA 159 has been certified by the Orthodox Union as Kosher Pareve under the UK ID number of OUV3-A6E0470 when prepared in either the Addison, Illinois or Burlingame, California facilities.

PREPARED BY: Garratt Callahan

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Supersedes: May 1, 2008

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