

SECTION 1 - PRODUCT IDENTIFICATION

PRODUCT NAME:	FORMULA 16
PRODUCT USE:	CORROSION INHIBITOR
RESTRICTIONS ON USE:	Refer to label, available technical information, and other appropriate sections of this SDS.
UN NUMBER:	NOT REGULATED
PROPER SHIPPING NAME:	NOT REGULATED
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:	SD6016
DATE OF REVISION:	9/1/2015

SECTION 2 - HAZARDS IDENTIFICATION
SIGNAL WORD: DANGER

HAZARD STATEMENT:

H302: Harmful if swallowed. 4
 H314: Causes severe skin burns and eye damage.
 H332: Harmful if inhaled. 4

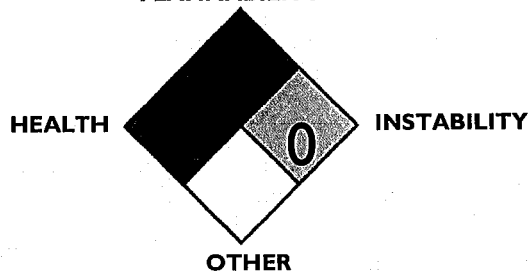

PRECAUTIONARY STATEMENTS: (PREVENTION)

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.
 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.
 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
REACTIVITY HAZARD (YELLOW)	0

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>
SODIUM SILICATE	1344-09-8	215-687-4	N/A	40-50

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. P310: Immediately call a POISON CENTER or doctor/physician.

DANGER: CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. HARMFUL IF INHALED OR SWALLOWED. 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. Rinse skin with water/shower. Minimum flushing time is for 15 minutes. P363: Wash contaminated clothing before reuse. The exposed individual must seek medical attention if any adverse effect occurs.

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. The exposed individual must seek immediate medical attention if any adverse effect occurs.

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+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. 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. Exposed individual must seek immediate medical attention if any adverse effect occurs. 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:

None known.

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.

Fire fighting: Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by products. Stay upwind and keep out of low areas.

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. Wet material is slippery under foot.

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. This material is alkaline and may raise the pH of surface waters with low buffering capacity.

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.

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.

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	
SODIUM SILICATE	1344-09-8	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. 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.

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:	Clear liquid to opaque	VAPOR PRESSURE, mm Hg @ 20°C :	Not established
ODOR :	Odorless	VAPOR DENSITY (Air=1):	Not established
ODOR THRESHOLD:	Not established	RELATIVE DENSITY@20°C (water=1):	1.36 - 1.61
pH:	11.0 - 11.4	SOLUBILITY IN WATER:	Complete
MELTING/FREEZING POINT:	30°F (-1°C)	PARTITION COEFFICIENT(n-octanol/water)	Not established
BOILING POINT:	214-216°F (101-102°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 applicable		

SECTION 10 - STABILITY AND REACTIVITY

REACTIVITY: Prolonged contact with incompatible metals may produce flammable hydrogen gas.

STABILITY: Stable at normal temperatures and pressures.

POSSIBILITY OF

HAZARDOUS REACTIONS: See conditions to avoid and incompatible materials.

CONDITIONS TO AVOID: Prolonged storage above 140°F (60°C). Contact with acids will cause gelling and evolution of heat.

INCOMPATIBLE MATERIALS: Acids, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys.

HAZARDOUS

DECOMPOSITION PRODUCTS: Thermal decomposition yield oxides of carbon and nitrogen.

SECTION 11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICAL EFFECTS:

LD50, oral, rat: 1153 mg/kg.

LD50, Dermal, rabbit: 4640 mg/kg.

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

RELATED SYMPTOMS: Skin, eye, respiratory and gastrointestinal irritation. May be harmful if swallowed. Skin, eye, respiratory and gastrointestinal irritation. May be harmful if swallowed. Solutions of sodium silicate are alkaline. Exposure to alkaline solutions may result in irritation to severe burns depending on the concentration and duration of the exposure. Sodium silicate is a type of amorphous silica and does not cause pulmonary silicosis.

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:

Fish: 96 hr, LC50, Fathead minnow, 5751.7 mg/L

Daphnia: 48 hr, LC50, Daphnia magna, 2181.8 ppm

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: See section 11.

PERSISTENCE AND DEGRADABILITY: This material is believed to persist in the environment. This material is inorganic and not subject to biodegradation.

BIOLOGICAL ACCUMULATION POTENTIAL: The material is not expected to bio-concentrate in organisms.

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: 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: NOT REGULATED

IMDG/IMO: NOT REGULATED

IATA/ICAO: NOT REGULATED

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.

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 SILICATE

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 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: NO; 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 of this product are on the DSL or NDSL Inventories or are exempt from listing
CANADIAN WHMIS CLASSIFICATION: D2B.

SECTION 16 - OTHER INFORMATION

PREPARED BY: GARRATT CALLAHAN

DATE OF REVISION: 9/1/2015 Supercedes: 7/1/2013

Formula 16 is registered with the NSF to the NSF International Registration Guidelines for Proprietary Substances and Nonfood Compounds for category codes G3, G5, G6; with NSF Reg. No. 045934.

Formula 16 is registered with the NSF to the Nationally Recognized Health Effects Standard (ANSI 60) for chemicals which are used to treat drinking water; with NSF DCC# DA03684.

MAXIMUM USE LEVEL OF THIS PRODUCT IN POTABLE WATER: 42 mg/L

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