SAFETY DATA SHEET

Product Name : FSS ProGuard CPVC **Date Issued : December 2, 2015**

SECTION 1 : PRODUCT AND COMPANY IDENTIFICATION

Product Name: FSS ProGuard CPVC **Chemical Synonym / C# :** c1048
Formula : Multi-component mixture **Chemical Family:** Corrosion Inhibitor

Supplier : Huguenot Laboratories 101 Riverdale Rd. Port Jervis, NY 12771
Information Telephone : (800)228-3793 **Emergency Telephone :** (855) 347-8203

SECTION 2 : HAZARD IDENTIFICATION

Form : liquid **Color :** Clear amber
Emergency Overview : Toxic if swallowed or dust is inhaled. **Sodium Nitrite** in dry form is an Oxidizer: May ignite organic materials and react with other materials. Can decompose if mixed with acids or exposed to fire conditions, releasing toxic nitrogen oxides. Read the entire MSDS for a more thorough evaluation of the hazards.

OSHA Hazard Communication Standard
This product has been evaluated and classified as defined by OSHA Hazard Communication Standard, 29CFR 1910.1200.

GHS Classification :
Oxidizing liquids (Category 3)
Acute toxicity, Oral (Category 4)
Eye irritation (Category 2A), H319
Acute aquatic toxicity (Category 2)
Chronic aquatic toxicity (Category 2)
Signal Word : Warning

GHS Hazard Pictograms :


Flame Over Circle,

Exclamation Mark,

Environment

Hazard Statements :
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements :
P210 Keep away from heat.
P220 Keep/Store away from clothing/ combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P264 Wash skin 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.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Precautionary Statements, continued :

P302 + P352 IF ON SKIN: wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification :

None known. See Section 11 for Potential Health Hazards

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	CAS #	% (w/w)
Sodium Nitrite	7632-00-0	10 - 20
Sodium Tetraborate Decahydrate	1303-96-4	1 - 5
Sodium Hydroxide	1310-73-2	1 - 5

Unlisted components are considered non-hazardous as per 29CFR1910.1200g2C. See section 15 for specific state right-to-know information if applicable.

SECTION 4 : FIRST AID MEASURES

Eye Contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin Contact: Wash off with soap and plenty of water. Consult a physician
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5 : FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Fire Fighting Procedures: Wear self contained breathing apparatus for fire fighting if necessary.
Wear self contained breathing apparatus for fire fighting if necessary.
Unusual Fire and Explosion Hazards: None known.
Special hazards arising from the substance or mixture : nitrogen oxides (NOx), Sodium oxides

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Personal precautions : Use personal protective equipment (see section 8). Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental precautions : Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Steps to be taken in case material is released or spilled:
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

SECTION 7 : HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking.Keep away from heat and sources of ignition.
Storage Requirements: Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

Hazardous Ingredient	ACGIH TLV (mg/m3) TWA	ACGIH TLV (mg/m3) STEL
Sodium Nitrite	-	-
Sodium Tetraborate Decahydrate	5	-
Sodium Hydroxide	-	2 (ceiling)

Engineering measures :

Ventilation / Local Exhaust : Use local exhaust ventilation in any areas where product dusts may be generated.

Ventilation / Mechanical Recommendations: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below level of overexposure (from known, suspected or apparent adverse effects).

Personal protective equipment :

Respiratory Protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection : Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Eye Protection: Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Appearance / Odor: Clear amber liquid, odor nil.
Water Solubility: Complete
Specific Gravity: 1.14
Evaporation Rate(water=1): N/A
Vapor Density(air=1) : N/A
Flash Point : None
Flammable Limits: LEL = N/A **UEL =** N/A
pH (100%): 10 - 11
Boiling Point (°F) : 212+
% Volatile: N/A
Vapor Pressure(mmHg): N/A
Flash Point Method Used: N/A

SECTION 10 : STABILITY AND REACTIVITY

Hazardous Decomposition Products: Oxides of nitrogen (toxic and irritating).
Chemical Stability: Stable under recommended storage conditions.
Conditions to Avoid: Excessive heat, flame, ignition sources, shock, friction, incompatibles.
Incompatibility with other Substances: Acids, Powdered metals, Ammonia, Cyanides, Amines, Activated carbon
Hazardous Polymerization: Will not occur.

SECTION 11 : TOXICOLOGICAL INFORMATION

Potential Health Hazards (as Sodium Nitrite) :

Skin Contact: Prolonged contact may cause irritation.

Eye Contact: May cause temporary irritation.

Inhalation: Dusts and mists may irritate nose and throat. Inhalation may result in toxic effects similar to ingestion.

Ingestion: May irritate mouth, esophagus and stomach. Although small quantities of sodium nitrite are used in food preparation, swallowing moderate amounts can result in serious toxic effects including death. Effects include nausea, weakness, cyanosis (blue skin), collapse and coma, possibly leading to death. Sodium nitrite interferes with the bloods ability to transport oxygen.

Delayed Effects : Sodium nitrite has no known delayed effects. (If sodium nitrite is used with amines found in certain fluids, potentially carcinogenic nitrosamine compounds may be formed.)

Potential Health Hazards (as Sodium Tetraborate Decahydrate) : Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because borax decahydrate is poorly absorbed through intact skin.

Inhalation: Occasional mild irritation effects to nose and throat may occur from inhalation of borax decahydrate dusts at levels higher than 10 mg/m_3.

Eye contact: Borax decahydrate is a serious eye irritant.

Skin contact: Borax decahydrate does not cause irritation to intact skin.

Ingestion: Products containing borax decahydrate are not intended for ingestion. Borax decahydrate has low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Reproductive/Developmental: Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction. . A recent epidemiological study and a peer reviewing report of the past epidemiological studies conducted in China didn't show any negative effect of boron on human fertility (5, 6).

5. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
6. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)

Potential Health Hazards (as Sodium Tetraborate Decahydrate), continued :

Potential ecological effects: Large amounts of borax decahydrate can be harmful to plants and other species. Therefore releases to the environment should be minimized.

Signs and symptoms of exposure: Symptoms of accidental over-exposure to borax decahydrate have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling (see section 11).

Toxicological Data (for sodium nitrite):

Skin Corrosion/Irritation: Not classified **pH:** 9
Serious Eye Damage/Irritation: Causes serious eye irritation. **pH:** 9
Respiratory or Skin Sensitization: Not classified
Germ Cell Mutagenicity: Not classified
Teratogenicity: Not classified
Carcinogenicity: Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Aspiration Hazard: Not classified
Potential Adverse Human Health Effects and Symptoms: Toxic if swallowed.
Symptoms/Injuries After Inhalation: May cause respiratory irritation.
Symptoms/Injuries After Skin Contact: May cause skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: Toxic if swallowed.
Chronic Symptoms: None expected under normal conditions of use.
Toxicity Data :

LD50 (oral, rat) = 180 mg/kg
LD50 (oral, rabbit) = 186 mg/kg
LC50 (Inhalation, rat) = 5.5mg l (4hr)

Note : Amines may react with nitrites to form nitrosamines. Some nitrosamines have been shown to be carcinogenic in laboratory animals.

Toxicological Data (for sodium tetraborate decahydrate):

Acute toxicity Low acute oral toxicity; LD_{50} in rats is 6,000 mg/kg of body weight.
Skin corrosion / irritation Low acute dermal toxicity; LD_{50} in rabbits is greater than 2,000 mg/kg of body weight. Borax decahydrate is poorly absorbed through intact skin. Non-irritant.
Serious eye damage/ irritation Borax decahydrate is a serious eye irritant.
Respiratory or skin sensitization: Borax is not a skin sensitizer.
Reproductive toxicity Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes (1). Studies with chemically related boric acid in rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those which humans would normally be exposed to (2, 3, 4). Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

1. Weir R J, Fisher R S, Toxicol. Appl. Pharmacol., (1972), 23, 351-364
2. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88-2580 (1987), PB88 213475/XAB
3. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
4. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277

Toxicological Data (for sodium tetraborate decahydrate), continued :

STOT-single exposure N.A.

STOT-repeated exposure N.A.

Aspiration hazard Low acute inhalation toxicity; LC_{50} in rats is greater than 2.0 mg/l (or g/m_3).

Toxicological Data (as Sodium Hydroxide): Acute dermal LD50 1.35g/kg(rabbit).

Carcinogenicity: This product does not contain any materials considered to be carcinogenous according to OSHA, NTP, IARC, or ACGIH.

SECTION 12 : ECOLOGICAL INFORMATION

Exotoxicological Information (for sodium nitrite):

General: Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

LC50 Fish 1 : 0.19 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

LC50 Fish 2 : 0.092 - 0.13 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [flow-through])

Persistence and Degradability : Not established.

Bioaccumulative Potential : Not established.

Log Pow : -3.7 (at 25°C)

Mobility in Soil : Not available

Exotoxicological Information (for sodium tetraborate decahydrate):

Phytotoxicity: Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimise the amount of borate product released to the environment.

Algal toxicity

Green algae, *Pseudokirchneriella subcapitata* (Hansveit and Oldersma, 2000)

72-hr EC50 –biomass = 40 mg B/L, or 229 mg boric acid/L.

Invertebrate toxicity

Daphnia, Daphnids, Daphnia magna (Gersich, 1984a)

48-hr LC50 = 133 mg B/L or 760 mg boric acid/L or 619 mg disodium tetraborate , anhydrous/L

Fish toxicity

Fish, Fathered minnow, Pimephales promelas (Soucek et al., 2010)

96-hr LC50 = 79.7 mg B/L or 456 mg boric acid/L or 370 mg disodium tetraborate, anhydrous

Persistence and degradability: Boron is naturally occurring and ubiquitous in the environment. Borax is a naturally occurring borate.

Bio-accumulative potential: Not significantly bio-accumulative.

Mobility in soil: The product is soluble in water and is leachable through normal soil.

Results of PBT and vPvB assessment No data available

Other adverse effects No data available

Exotoxicological Information (as Sodium Hydroxide): Can cause damage to vegetation. Toxicity is primarily associated with pH. Toxic to aquatic life.

Environmental Effects: Can be dangerous if allowed to enter drinking water intakes. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers.

Persistence and Degradation: Degrades readily by reacting with natural carbon dioxide in the air. Does not bioaccumulate.

SECTION 13 : DISPOSAL CONSIDERATIONS

Waste Disposal Method: Recycle, recovery and reuse of materials, where permitted, is encouraged as an alternate to disposal as a waste. Hazardous waste classification under federal regulations (40 CFR Part 261 et seq) is dependent upon whether a material is a RCRA listed hazardous waste or has any of the four RCRA hazardous waste characteristics. Refer to 40 CFR Part 261.33 to determine if a given material to be disposed of is a RCRA listed hazardous waste. RCRA Hazardous Waste Characteristics: There are four characteristics defined in 40 CFR Section 261.21-61.24: *Ignitability, Corrosivity, Reactivity, and Toxicity*. To determine Ignitability, see Section 9 of this SDS (flash point). For Corrosivity, see Sections 9 and 14 (pH and DOT corrosivity). For Reactivity, see Section 10 (incompatible materials). For Toxicity, see Section 2 (composition). Federal regulations are subject to change. State and local requirements, which may differ from or be more stringent than the federal regulations, may also apply to the classification of the material if it is to be disposed.

Is the unused product a RCRA hazardous waste (40CFR261.33) if discarded? Yes

If yes, the RCRA ID number is : D001 (Ignitable)

SECTION 14 : TRANSPORTATION INFORMATION

Transportation Emergency Telephone Number: 3E 24 hour number : (855) 347-8203

UN Number / DOT Proper Shipping Name / DOT Hazard Class /Packing Group / DOT Label & other information: UN3219, Nitrites, inorganic, aqueous solution, N.O.S. (Sodium Nitrite)

5.1, PGIII, (OXIDIZER, ERG#140)

SECTION 15 : REGULATORY INFORMATION

US FEDERAL REGULATIONS :

TSCA (Toxic Substances Control Act) Status : Sodium Nitrite listed on TSCA Inventory of Chemical Substances

OTHER TSCA ISSUES : Sodium Nitrite requires export notification (Section 12b) and is subject to SNUR if used in metalworking fluids (40CFR721.4740).

CERCLA RQ - 40 CFR 302.4(a) :

Component	RQ (lbs)
Sodium Nitrite	100
Sodium Hydroxide	1000

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (800) 424-8802 and to your Local Emergency Planning Committee.

SARA 302 Components - 40 CFR 355 Appendix A

Section 302 Component(s)	TPQ (lbs)	RQ (lbs)
Sodium Nitrite	none	100

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center (800) 424-8802 and to your Local Emergency Planning Committee.

SARA 311/312 Classification - 40 CFR 370.2 :

(as Sodium Nitrite) : Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard
(as sodium tetraborate decahydrate): Chronic Health Hazard
(as Sodium Hydroxide) : Immediate (Acute) Health, Reactive Hazard

SARA 313 Components - 40 CFR 372.65:

Section 313 Component(s)	CAS #	%
Sodium Nitrite	7632-00-0	20 - 25

INTERNATIONAL REGULATIONS :

WHMIS Classification (as Sodium Nitrite) :

C: Oxidizing Material
D1B: Toxic Material Causing Immediate and Serious Toxic Effects
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects

Sodium Nitrite (CAS#7632-00-0) is listed on the following inventories or in compliance with the following inventories : Switzerland New notified substances and declared preparations, Canada DSL, Australia AICS, New Zealand Inventory of Chemical Substances, Japan ENCS, Japan ISHL, Korea KECI, Philippines PICCS, China IECSC

Sodium tetraborate decahydrate (CAS#1303-96-4) is listed on the following inventories or in compliance with the following inventories : Canada (DSL), ECN. South Korea, Japan (MITI).
Clean Air Act (Montreal Protocol): Borax decahydrate was not manufactured with and does not contain any Class I or Class II ozone depleting substances.
EU Reach Regulation: Disodium tetraborates are listed in the Candidate List of Substances of Very High Concern “SVHC” for eventual inclusion in Annex XIV to REACH Regulation 1907/2006 (“Authorization List”) (18.06.2010-ED/30/2010).
Disodium tetraborates are listed in the Annex XVII of REACH Regulation 1907/2006 (EU No. 109/2012) and its use in consumer products above specific concentration limits is restricted. Note that this restriction is only specific to consumer products and do not cover its industrial and/or professional applications. Disodium Tetraborates can be used in consumer products below specific concentration limits (which is C ≥8.5% for Borax decahydrate).

Sodium Hydroxide (CAS#1310-73-2) is listed on the following inventories or in compliance with the following inventories : Canada : WHMIS Hazard Class : D1B, E

STATE REGULATIONS :

California Safe Drinking Water Act (Prop. 65) Listing : None listed

Other Regulations / Legislation which apply to this product:

Sodium tetraborate decahydrate (CAS#1303-96-4) is listed on the following inventories : Massachusetts RTK Substance List, Pennsylvania Right-to-Know Hazardous Substances, New Jersey Right-to-Know

Sodium Hydroxide (CAS#1310-73-2) is listed on the following inventories : Florida, New Jersey Special Heath Hazard Substance List, Minnesota Hazardous Substance, California Director’s List of Hazardous Substances, Pennsylvania Right-to-Know Special, Rhode Island Hazardous Substance List, Massachusetts Right-to-Know, Pennsylvania Right-to-Know, New Jersey Right-to-Know, CERCLA.

SECTION 16 : OTHER INFORMATION

NFPA Rating : HEALTH: 2 FLAMMABILITY: 0 REACTIVITY: 1
NFPA hazard degree designation 704: 4 = extreme, 3 = high, 2 = moderate, 1 = slight, 0 = none.

Revision Date : 12/2/2015

Information and data compiled to compose this SDS is correct to the best of our knowledge as of the printed date, and is offered solely for your consideration, investigation, and verification.