ESSENTIAL CHEMISTRY. INNOVATIVE SOLUTIONS.

SAFETY DATA SHEET

Print Date: August 20, 2019

Section 1: Product & Company Information

Product Identifier: **Sodium Fluoride**

Other Means of Identification
Product Number: 112080

Recommended Use and Restrictions on Use
Recommended Use:
Restrictions on Use:

Manufacturer / Importer / Supplier / Distributor Information

Company Name: CORECHEM Inc.
Address: 4320 Greenway Drive
Knoxville, TN 37918
USA

Information Telephone Number: 1-865-524-4239
Fax Number: 1-865-524-3375
Website: www.corecheminc.com
Contact Person: Regulatory Manager
E-mail: regulatory@corecheminc.com

Emergency Phone Number: Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 *(monitored 24 hours/day)*

Section 2: Hazards Identification

GHS Hazard Classification(s)
In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

Physical Hazard(s)
Not classified.

Health Hazard(s)
Acute Toxicity, Oral - 2
Corrosion/Irritation, Skin - 2
(Corrosion)Damage/Irritation, Eye - 2A

Environmental Hazard(s)
Aquatic, Chronic - 3

Label Elements

Signal Word
DANGER

Hazard Symbol(s)

Hazard Statement(s)
H300: Fatal if Swallowed.
H315: Causes skin Irritation.
H319: Causes serious eye Irritation.
H412: Harmful to aquatic life with long lasting effects.

Precautionary Statements

General
Not applicable.

Prevention
P264: Wash face, hands and any exposed 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.

Response

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321: Specific treatment (see supplemental first aid instructions on this label).
P330: Rinse mouth.
P332 + P313: If skin irritation occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.

Storage

P405: Store locked up.

Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC)

None known.

Section 3: Composition/Information on Ingredients

Substance

Chemical Identity [2]	Common Name/Synonym(s)	CAS # [3]	Weight %	Impurity or Stabilizing Additive
Sodium Fluoride	Floridine; Sodium monofluoride; Disodium difluoride; Natrium fluoride; Florocid	7681-49-4	98-100	

1. Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
2. Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
3. "—"Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

Section 4: First-Aid Measures

General Information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Wash contaminated clothing before reuse.

Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Skin Contact

Take off immediately all contaminated clothing. Wash off IMMEDIATELY with plenty of water for at least 15-20 minutes. Get medical attention immediately! Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes.

Eye Contact

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately. In case of irritation from airborne exposure, move to fresh air. Get medical attention immediately.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

Symptoms

Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Hazards

For large exposures, systemic effects (hypocalcemia and hypomagnesia) may occur.

Treatment

Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Section 5: Fire-Fighting Measures

General Fire Hazards
Non-flammable material

Suitable (and Unsuitable) Extinguishing Media
Suitable Extinguishing Media
Sodium Fluoride does not burn. Use extinguishing agents that will put out the surrounding fire.
Unsuitable Extinguishing Media
None

Specific Hazards Arising from the Chemical
None

Special Protective Equipment and Precautions for Firefighters
Special Fire-Fighting Equipment Procedures
None

Special Protective Equipment for Fire-Fighters
Sodium fluoride does not burn. Wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear as surrounding fire dictates.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures
Evacuate spill area. Isolate hazard area and deny entry to unnecessary or unprotected personnel. Stay upwind and keep out of low area. Remove all possible sources of ignition in the surrounding area. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment. Ventilate contaminated area thoroughly shut off leaks if possible without personal risk.

Methods and Materials for Containment and Clean-Up
Pick up and arrange disposal without creating dust. Vacuum. Do not flush with water. Keep in suitable, closed containers for disposal.
Never return spills in original containers for re-use. For waste disposal, see Section 13 of the SDS.

Notification Procedures
Notify authorities if any exposure to the general public or environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained.

Environmental Precautions
Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Use appropriate containment of product and firefighting water to avoid environmental contamination. Prevent from spreading or entering drains, ditches, or rivers by using sand, earth, or other appropriate barriers.
Avoid discharge into drains, water courses or onto the ground.

Section 7: Handling and Storage

Precautions for Safe Handling
Use caution when handling/transferring. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe mist or vapor. Use only with adequate ventilation. Wear appropriate personal protective equipment. Transfer and storage systems should be compatible. Observe good industrial hygiene practices.

Conditions for Safe Storage, including any Incompatibilities
Keep away from food, drink and animal feeding stuffs. Do not store in metal containers. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal toxic materials. Keep container tightly closed. Store in cool, dry place. Store in a well-ventilated place.

Section 8: Exposure Controls/Personal Protection

Control Parameters
Occupational Exposure Limits

Chemical Identity	Type	Value	Source
Sodium Fluoride	TWA	2.5 mg F/m^3	OSHA PEL
Sodium Fluoride	TWA	2.5 mg F/m^3	US. ACGIH Threshold Limit Values
Sodium Fluoride	TWA	2.5 mg F/m^3	NIOSH REL

Biological Limit Values

Chemical Identity	CAS #	Parameter	Value	Biological Specimen	Source

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

Appropriate Engineering Controls

No data available.

Individual protection measures, such as personal protective equipment (PPE)

General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Eye/Face Protection

Wear safety glasses with side shields.

Skin Protection

Hand Protection

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory Protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information

Hygiene Measures

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

Section 9: Physical and Chemical Properties

Appearance:	
Physical State:	Solid
Color:	White Crystals
Odor:	Odorless
Odor Threshold:	No data available.
pH:	No data available.
Melting Point/Freezing Point:	993°C / 1814°F
Initial Boiling Point and Boiling Range:	1700°C / 3092°F
Flash Point:	No data available.
Evaporation Rate (butyl acetate=1)**:**	No data available.
Upper/Lower Limit on Flammability or Explosive Limits	
Explosive Limit – Upper:	No data available.
Explosive Limit – Lower:	No data available.
Vapor Pressure:	1.9 hPa (1.4 mmHg)
Vapor Density (air =1)**:**	No data available.
Relative Density (water=1)**:**	2.78 g/cm^3
Solubility(ies):	
Solubility in water:	4 g NaF/100 mL H_2O at 59°F (15°C)
Solubility (other):	No data available.
Viscosity:	No data available.
Other Information:	
Molecular Weight:	42
Formula:	NaF

Section 10: Stability and Reactivity

Reactivity

Accidental Contact of Sodium Fluoride with acids will produce very dangerous hydrogen fluoride gas.

Chemical Stability

Material is stable under normal conditions.

Possibility of Hazardous Reactions

Hazardous polymerization does not occur.

Conditions to Avoid
Prevent any contact with acids.

Incompatible Materials
Acids

Hazardous Decomposition Products
Although Sodium Fluoride does not burn, decomposition of it by reaction with acids or acidic vapors will produce extremely corrosive and toxic hydrogen fluoride.

Section 11: Toxicological Information

Information on routes of exposure

Ingestion: TOXIC! May cause salivation, nausea, vomiting and diarrhea, and abdominal pain. Symptoms of weakness, tremors, shallow respiration, cardopedal spasm, convulsions, and coma may follow. May cause brain and kidney damage. Affects hear and circulatory system. Death may occur from respiratory paralysis. Estimated lethal dose: 5-10 grams.

Inhalation: Causes severe irritation to the respiratory tract, symptoms may include coughing, sore throat, and labored breathing. May be absorbed through inhalation of dust; symptoms may parallel those from ingestion exposure. Irritation effects may not appear immediately.

Skin Contact: Causes Skin irritation, with redness and pain. Solutions are corrosive. Effects may not appear immediately.

Eye Contact: Eye Irritant! May cause irritation and serious eye damage. Effects may not immediately appear.

Information on Toxicological Effects

Acute Toxicity (List all possible routes of exposure)

Oral

Sodium Fluoride: LD50 (rat): 52 mg/kg
Sodium Fluoride: LD50 (mouse): 44mg/kg
Sodium Fluoride: LD50 (rabbit): 200 mg/kg

Dermal

Sodium Fluoride: Eye Draize Test (rabbit): 20mg/24hr.

Inhalation

Repeated Dose Toxicity

Skin Corrosion/Irritation

Serious Eye Damage/Eye Irritation

Respiratory/Skin Sensitization

Carcinogenicity

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

US. National Toxicology Program (NTP) Report on Carcinogens
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Germ Cell Mutagenicity
DNA Inhibition: Human, Fibroblast: 100 mg/L
Cytogenetic Analysis: Human, Fibroblast: 20 mg/L
Cytogenetic Analysis: Human, Lymphocyte: 20 mg/L
Mutation in Mammalian Somatic Cells: Human, Lymphocyte: 440 mg/L

Teratogenicity
Oral: TDLo (rat): 240 mg/kg (female 11-14 day(s) after conception) Specific Developmental Abnormalities – musculoskeletal system.

Oral: TDLo (rat): 255 mg/kg (female 85 days pre-mating) specific Developmental Abnormalities – central Nervous System.

Intraperitoneal: TDLo (rat): 9 mg/kg (female 10-18 days after conception) Effects on Embryo or Fetus – extra- embryonic structures (e.g., placenta, umbilical cord) and Effects on Embryo or Fetus – fetal death.

Reproductive Toxicity
Sodium Fluoride: TDLo (rat): 150 mg/kg (male 30 day(s) pre-mating) Reproductive – Paternal Effects – spermatogenesis (including genetic material, sperm morphology, motility, and count) and Paternal Effects – Testes epididymis, sperm duct and fertility – male fertility index e.g. number of males impregnating females per number of males exposed to fertile non pregnant females)

Sodium Fluoride: TDLo (rat): 221 mg/kg (female 1-20 day(s) after conception) Fertility – Post- implantation mortality (e.g. dead and/or resorbed implants per total number of implants)

Epidemiology

Oral: TDLo (rat): 617 mg/kg/2Y-c (Tumorigenic – equivocal tumorigenic agent by TRECS criteria – Endocrine- thyroid tumors and Musculoskeletal – tumors.

Oral: TDLo (mouse): 14 mg/kg/ 43W-C (Tumorigenic – equivocal Tumorigenic agent by RTECS Criteria – Skin and Appendages – Tumors.

Specific Target Organ Toxicity – Single Exposure

None known.

Specific Target Organ Toxicity – Repeated Exposure

None known.

Aspiration Hazard

Not classified.

Other Effects

None known.

Section 12: Ecological Information

Ecotoxicity

Acute Hazards to the Aquatic Environment

Fish

Sodium Fluoride: Toxicity to fish mortality NOEC (Cyprinodon variegatus (sheepshead minnow)): 500 mg/L – 96 hr
Sodium Fluoride: LC50 (Oncorhynchus mykiss (rainbow trout)): 200 mg/L – 96 hr.

Aquatic Invertebrates

Sodium Fluoride: EC50 (Daphnia magna (Water Flea)): 98 mg/L – 48 hr.

Toxicity to Aquatic Plants

No data available.

Chronic Hazards to the Aquatic Environment

Fish

No data available.

Aquatic Invertebrates

No data available.

Toxicity to Aquatic Plants

No data available.

Persistence and Degradability

Biodegradation

There are no data on the degradability of this product.

BOD/COD Ratio

No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Bioaccumulation Salmo Trutta – 10 d – 5 mg/L
Bioconcentration Factor (BCF): 2.3

Partition Coefficient n-octanol / water (log Kow)

No data available.

Mobility in Soil

No Data Available

Other Adverse Effects

No data available.

Section 13: Disposal Considerations

Disposal Instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Contaminated Packaging

Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.

Section 14: Transportation Information

US Department of Transportation (DOT)

UN Number:	UN1690
UN Proper Shipping Name:	Sodium fluoride
Technical Name:	
Hazard Class:	6.1
Subsidiary Hazard Risk:	-
Packing Group:	III
DOT Label/Placard Exemptions:	Not determined
Special Provisions:	IB8, IP3, T1, TP33
Packaging Exceptions:	49CFR 173.153
Packaging Non-Bulk:	49CFR 173.213
Packaging Bulk:	49CFR 173.240
Reportable Quantity (RQ):	1,000lb (454kg)
Marine Pollutant:	No
Poison Inhalation Hazard:	No
Special precautions for user:	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Emergency Response Guidebook (ERG) #:	154

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

Section 15: Regulatory Information

US Federal Regulations

Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

Sodium Fluoride: 100 lb final RQ 454 kg

Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

Emergency Planning and Community Right-To-Know Act (EPCRA)

EPCRA 302 Extremely Hazardous Substance

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA 304 Emergency Response Notification

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

EPCRA 311/312 Emergency and Hazardous Materials Reporting

EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

This material does not contain any chemical(s) with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

Section 16: Other Information

Prepared By:	Regulatory Manager
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Revision Date:	-
Revisions:	01

Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL – Immediately Dangerous to Life and Health
Kg – Kilogram
l – Liter
lb – Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ml – milliliter
N/A – Not Applicable
N/D – Not Determined
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
STEL – Short-term Exposure Limit
TWA - Time weighted average

ACGIH - American Conference of Industrial Hygienists
AIHA – American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS – Chemical Abstracts Service
DOT – US Department of Transportation
EPA – US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container
IMDG - International Maritime Dangerous Goods
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OSHA – US Occupational Health and Safety Administration
SARA – US EPA Superfund Amendments and Reauthorization Act
TSCA – US EPA Toxic Substances Control Act
UN - United Nations

References

HSDB® - Hazardous Substances Data Bank

Disclaimer

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