SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

- **Product Name:** VACUETTE® FC-Mix
- **Material Numbers:** 454510
  454511
  454513
  454514
- **Manufacturer/Supplier:**

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- **Emergency Telephone Number: +43 1 406 43 43**

SECTION 2: HAZARDS IDENTIFICATION

- **Hazard description:**

H302:	Harmful if swallowed
H332:	Harmful if inhaled
H315:	Causes skin irritation
H319:	Causes serious eye irritation
H373:	May cause damage to organs through prolonged or repeated exposure exposure cause the hazard

Pictogram:

Signalword: Danger

Prevention:
P260: Do not breathe dust
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product

P280: Wear protective gloves/protective clothing/eye protection

Reaction:
P312: Call a POISON CENTER or doctor/physician if you feel unwell
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
P337+P313: If eye irritation persists: Get medical advice/attention
P308+P310: IF exposed or concerned: Immediately call a POISON CENTER or doctor/physician

Storage:
P405: Store locked up

Disposal:
P501: Dispose of contents/container to a waste management company

- **Acute exposure effect:**
  Irritation and corrosion, coughing, nausea, headache, cramps, risk of corneal clouding. Systemic effect: drop in the blood calcium level

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

- **Description: VACUETTE PET Tube** (Polyethyleneterephthalate) with FC-Pulver
- **Chemical name:** Mixture containing hazardous components

Name	CAS-Nr.	EG-Nr.	Gew%	Einstufung
Citric Acid Monohydrate	5949-29-1	201-069-1	<50 %	serious eye irritation 2; H319
EDTA, Disodium Salt, Dihydrate	6381-92-6	205-358-3	<35 %	Acute toxicity, Inhalation 4; H332 STOT RE 2; H373
Sodium fluoride	7681-49-4	231-667-8	<5 %	Acute toxicity, oral 3; H301 Skin irritation, 2; H315 serious eye irritation 2; H319

- **Quantity of substances:** < 1% (mass %)
- **Exposure limits:** N/A

SECTION 4: FIRST AID MEASURES

- **Skin:** Contaminated clothing and shoes immediately. Rinse with plenty of water wash and soap, consult a doctor if skin irritation persists. Wash contaminated clothing before reuse.
- **Eyes:** Flush at least 10 minutes with plenty of water with eyelids open; consult with continuing complaints ophthalmologist.
- **Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Rinse mouth with water several times, Victim should drink copious amounts of water to dilute. Get medical attention.

Effects: Irritation and corrosion, coughing, nausea, headache, cramps, risk of corneal clouding. Systemic effect: drop in the blood calcium level

Special notes: NaF-containing powder mixture! On suspicion of systemic exposure to intensive medical monitoring is advised fibrillation by electrolyte shift

SECTION 5: FIRE-FIGHTING MEASURES

- **Suitable extinguishing media:** carbon dioxide, dry powder, water spray or alcohol resistant foam
  Unsuitable extinguishing media: Avoid water jet, otherwise there are no limitations of extinguishing agents
- **Protective equipment:** Firefighters should wear proper protective equipment and self-contained breathing apparatus with full-face piece operated in positive pressure mode.
- **Special hazards arising from mixture:**
  Special gases: carbon monoxide, hydrogen fluoride, nitrogen oxides, sodium oxide
  In case of fire hazardous gases may occur as decomposition products.
  Do not inhale fumes, powder mixture is flammable, danger of dust explosion
- **Advice for firefighters:**
  Move containers from fire area if it can be done without risk, if not possible apply water from a safe distance to cool and protect surrounding area.
  Carrying a self-contained breathing apparatus and protective clothing is recommended.
  Contain escaping vapors with water
- **Special Notes:**
  Prevent further leakage or spillage. Do not let product enter drains. Do not discharge to the environment

SECTION 6: ACCIDENTAL RELEASE MEASURES

- **Personal precautions:**
  Avoid overexposure. Wear suitable protective clothing. Personal protective equipment (Section 8).
  Avoid dust formation, care in dusting for adequate ventilation Do not inhale dust, avoid contact with skin and eyes provide for adequate ventilation
- **Environmental precautions:**
  Prevent further leakage or spillage. Do not let product enter drains. Do not discharge to the environment
- **Methods for cleaning up:**
  Sweep up in a chemical waste container and neutralise with calcium hydroxide or sodium carbonate solution to dispose. Flush residual area with copious amounts of water.
- **Special Notes**
  Hazardous combustion products Refer to section 5
  For personal protection see section 8
  Incompatible materials See section 10
  Waste treatment see section 13

SECTION 7: HANDLING AND STORAGE

- **Handling:**
  Advice for safe handling: Keep container tightly closed. Suitable for any general chemical storage area. Avoid inhalation of dusts.
  Observe normal hygiene measures, ensure good ventilation in the workplace, change contaminated clothing immediately, wash before breaks and after finishing work and face, apply preventive skin protection.
  Containers, equipment and working place clean. Avoid contact with eyes and skin, avoid dust, provide for dusting adequate ventilation.
  Information about protective measures are in section 2.2.
  Information about protection against explosions and fires: Avoid contact with incompatible material, minimize dust generation and accumulation.
- **Storage:**
  Requirements to be met by storerooms and receptacles: Keep container tightly closed.
  Keep containers tightly closed in cool, dry and away from food, beverages, tobacco and fodder in a well ventilated area. Do not store with oxidizing agents and acids
  Suitable materials: polyethylene, Teflon
  Unsuitable materials: glass, metal

Recommended storage temperature: 15 – 25°C
Information about storage in one common storage facility: Suitable for any general chemical storage area.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

- **Control parameters:**
  Components with workplace control parameters: Sodium fluoride

Material	CAS-No.	Type of exposure	Value	Based on
NaF	7681-49-4	TMW (respirable fraction)	2,5 mg/m³	Grenzwerte-VO (MAK-Values)
		KZW (respirable fraction)	12,5 mg/m³	
		TWA	2,5 mg/m³	RL 2000/39 EG

- **Personal protective equipment:**
  Engineering Controls:
  Ensure adequate ventilation or dust extraction, technical measures and the application of suitable work processes have priority before the use of personal protective equipment; the general safety regulations when handling chemicals have to be observed; avoid contact with skin, eyes and clothing.; general hygienic work practice see Section 7.
  Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
  Personal Protective Equipment:
  Respiratory Protection:
  Where risk assessment shows air-purifying respirators are appropriate use a full-face particle Respirator type P2 (EN 143)
  Hand Protection:
  Handle with gloves. The gloves has to be impermeable and resistant to the mixture. Due to missing test, there can't be given a recommendation for the glove material. The selection of suitable gloves depends on the material and other quality features. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. A guide for the material recommendation:
  Material: Nitrile rubber
  Minimum layer thickness: >0,11 mm
  Break through time: >480 min
  Eye protection:
  Use safety glasses, use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU).
  Skin and Body protection:
  Wear appropriate protective clothing to prevent skin exposure.
- **Hygiene measures:** Wash thoroughly after handling. Remove contaminated and wash before reuse. Avoid contact with eyes, skin and clothing. Avoid ingestion and inhalation. Use with adequate ventilation. Provide eye bath and safety shower.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

- **General information**
  Form: Crystalline powder
  Color: White
  Odor: Odorless
- **pH-value:** No data available
- **Melting point/freezing point:** No data available
- **Initial boiling point and boiling range:** No data available
- **Flash point:** No data available
- **Evaporation rate:** No data available
- **Flammability:** No data available
- **Upper/lower flammability or explosive limits:** No data available
- **Vapour pressure:** No data available

- **Vapour density:** No data available
- **Relative density:** No data available
- **Water solubility:** No data available
- **Partition coefficient: n-octanol/water:** No data available
- **Auto-ignition temperature:** No data available
- **Decomposition temperature:** No data available
- **Explosive properties:** No data available
- **Oxidizing properties:** No data available

SECTION 10: STABILITY AND REACTIVITY

- **Thermal decomposition / conditions to avoid:** intense heating, Exposure to moisture,
- **Incompatible Materials:** Oxidizing and reducing agents, bases, metals (aluminum, copper, copper alloys, nickel, zinc), strong acids, glass
- **Dangerous reactions:** glass
- **Hazardous decomposition products:**
  - **Weitere Zersetzungsprodukte:** Fluorwasserstoff
  - **In the event of fire:** Hydrogen fluoride, Sodium oxides, Nitrogen oxide, Carbon monoxide (see section 5).

SECTION 11: TOXICOLOGICAL INFORMATION

- **Acute Toxicity**

Sodium fluoride	LD_{50} rats oral: 148,5 mg/kg
	LD_{50} rats intravenous: 26 mg/kg
Citic acid-monohydrat	LD_{50} rats oral: 3000 mg/kg
	LD_{50} rats dermal: >2000 mg/kg
	LD_{50} rats intraperitoneal: 375mg/kg
Trisodium citrate - dihydrat	LD_{50} rats oral: >8000 mg/kg
EDTA-disodium-salt-dihydrat	LD_{50} rats oral: 2800 mg/kg

- **Skin corrosion/irritation:**
  - **Sodium fluoride:** Irritating to skin
- **Serious eye damage/eye irritation:**
  - **Citric acid:** Rabbit: strong irritation
  - **Sodium fluoride:** Rabbit: heavy irritation

- **Respiratory or skin sensitisation:** No data available
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:** No data available
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity - single exposure:** No data available
- **Specific target organ toxicity - repeated exposure:** No data available
- **Aspiration hazard:** No data available
- **Additional Information:** **RTECS:** No data available
  Contact with eyes, skin and mucous membranes causes irritation. Systemic effect: drop in blood-calcium-level, agitation, spasms, nausea. In our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated

SECTION 12: ECOLOGICAL INFORMATION

- **Ecotoxilogical effects:**
  The following data refers to the specified component:

Sodium fluoride:

Toxicity to fish	LC_{50} Gambusa affinis	925 mg/l / 96 h
	LC_{50} Oncorhynchus mykiss	200 mg/l / 96 h
Toxicity to daphnia	EC_{50} Daphnia magna	98 mg/l / 48 h
Algentoxizität	IC_{50} Desmodesmus subspicatus	850 mg/l / 72 h

Citic acid-monohydrat:

Toxicity to fish	LC_{50} Leuciscus idus melanotus	440 mg/l / 96 h
Toxicity to daphnia	EC_{50} Daphnia magna	120 mg/l / 72 h
	EC_5 Entosiphon sulcatum	485 mg/l / 72h
Toxicity to bacteria	EC_5 Pseudomonas putida	>10.000 mg/l / 16h
Toxicity to algae	IC_5 Microcystis aeruginosa	80 mg/l / 192 h

Trisodium citrate - dihydrat:

Toxicity to fish	LC_{50} Poecili reticulata	>18.000 mg/l / 96 h
Toxicity to daphnia	EC_{50} Daphnia magna	>5.600 mg/l / 48 h

EDTA-disodium-salt-dihydrat:

Toxicity to fish	LC_{50} Leuciscus idus	>500 mg/l / 96 h
	LC_{50} Poecili reticulata	320 mg/l / 96 h
Toxicity to daphnia	EC_{50} Daphnia	>100 mg/l / 24 h
Toxicity to bacteria	EC_{50} Pseudomonas putida	56 mg/l / 8 h
Toxicity to algae	EC_{50} Algae	<100 mg/l / 72 h

- **Persistence and degradability:**
  - **Citic acid-monohydrat:** 98% / 2 d – easily biodegradable
    CSB: 685 mg/g (COD)
    BSB: 481 mg/g (BOD)
    ThSB: 686 mg/g
  - **Trisodium citrate - dihydrat: ThSB: 417 mg/g**
- **Bioaccumulative potential:**
  - **Citic acid-monohydrat:** Distribution coefficient n-Octanol/Water: log POW: -1,72
    Bioaccumulation is not to expect
- **Mobility in soil:** No data available

- **Other adverse effects:**
  - **Sodium fluoride:** Harmful to aquatic life
    Hazard for drinking water
    Avoid exposition to environment
  - **EDTA-disodium-salt-dihydrat:** Avoid exposition to environment
  - **Trisodium citrate – dihydrat:** Slightly water hazardous
  - **Citic acid-monohydrat:** Avoid exposition to environment

SECTION 13: DISPOSAL CONSIDERATION

- **Waste treatment methods**
  The disposal is to be inquired at the competent local authorities. Do not let product enter drains. Leave chemicals in their original container; do not mix them with other wastes. Contaminated containers should be treated like the product itself.
- **Relevant legislation**
  Product residues should be disposed according to the Waste Directive 2008/98 / EC as well as national and regional regulations. The allocation of waste identity numbers or waste descriptions must be carried out according to EAK-Regulation and Waste Catalogue regulation
- **Note**
  The waste must be separated so that it can be handled separately by the waste facility. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

SECTION 14: TRANSPORT INFORMATION

- **DOT regulations:** Not regulated
- **Land transport ADR/RID:** Not dangerous goods
- **Maritime transport IMDG:** Not dangerous goods
- **Air transport ICAO-TI and IATA-DGR:** Not dangerous goods

SECTION 15: REGULATORY INFORMATION

- **Hazard Communication Standard (HCS) 29 CFR 1910.1200(g), revised in 2012**
- **EC Regulations: 1907/2006/EC, 1272/2008/EC**
- **National regulations: Chemical (Hazard Information and Packaging) Regulations: ChemG (Austria)**
- **Water hazard class:** N/A
- **Note:** Please note that there may be additional legal provisions to be observed. We recommend that you keep yourself informed about all applicable international, national and local regulations.

SECTION 16: OTHER INFORMATION

To the best of our knowledge, the information contained herein is accurate. However, neither Greiner Bio-One nor any of its subcontractors or suppliers assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.