



>>Entry Name: Sodium fluoride (NaF), 8CI, JAN, USAN

CAS Registry Number: 7681-49-4

Related CAS Registry Numbers(s): 15501-87-8 22554-99-0 39456-59-2

NaF

Molecular Formula: FNa

Molecular Weight: 41.988

Accurate Mass: 41.98817

Percentage Composition: F 45.25%; Na 54.75%

Source/Synthesis: Synth. by careful neutralisation of aq. HF with Na₂CO₃ or NaOH or by reaction of HF with NaCl

Use/Importance: Dental caries prophylactic. Commercially available. Used as an additive to glasses. Used to treat osteoporosis

Physical Description: White cubic cryst.

Melting Point: Mp 996°

Boiling Point: Bp 1695°. Bp 1704°

Solubility: Mod. sol. H₂O (4.2 g per 100 cm³ at 18°); spar sol. EtOH

Other Data: $\Delta H_f^\circ -575.4 \text{ kJ mol}^{-1}$; $\Delta G_f^\circ -545.1 \text{ kJ mol}^{-1}$; $S^\circ 51.21 \text{ J K}^{-1} \text{ mol}^{-1}$. Component of Checkmate, Fluoral, Pediaflor, Zendium and Fluorinse

Hazard & Toxicity: OES: long-term 2.5 mg/m³ (as F⁽⁻⁾). Lethal dose (70 kg man) estimated to be 5-10 g. Systemic acute effects include tremors, hyperreflexia, paraesthesia, tetany, convulsions, cardiac arrhythmias, and respiratory arrest. Chronic exposure may result in skeletal fluorosis. LD₅₀ (rat, orl) 52 mg/kg. Exp. reprod. and teratogenic effects

Aldrich: 44317-4

Fluka: 71518

Sigma: S6776

>>Variant: Mineral-form

Synonym(s): Villiaumite

Molecular Formula: FNa

Molecular Weight: 41.988

Accurate Mass: 41.98817

Percentage Composition: F 45.25%; Na 54.75%

Source/Synthesis: Found in alkalic rocks in e.g. USSR, Greenland, New Mexico

Physical Description: Minute cryst. Deep carmine red to lavender pink to light orange

References:

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