>>**Entry Name: Potassium fluoride,** 8CI

CAS Registry Number: 7789-23-3
Related CAS Registry Numbers(s): 59889-67-7

KF

Molecular Formula: FK
Molecular Weight: 58.097
Accurate Mass: 57.96211
Percentage Composition: F 32.70%; K 67.30%

Source/Synthesis: Synth. by neutralisation of KOH or K_2CO_3 with aq. HF. Cryst. as dihydrate which readily dehydrates
Use/Importance: Commercially available. When impregnated on silica (50 wt. %), effects C-, N-, O- and S- alkylations with alkyl halides, giving high yields under mild conditions. Fluorinating agent. Anticaries agent. Constit. of speciality glasses
Physical Description: Deliquescent colourless cryst.
Melting Point: Mp 858°
Boiling Point: Bp 1505°
Solubility: V. sol. H_2O (92 g per 100 cm^3 at 18°); insol. EtOH
Other Data: ΔH_f° –568.6 kJ mol^{-1}; ΔG_f° –538.9 kJ mol^{-1}; S° 66.5 JK^{-1} mol^{-1}
Hazard & Toxicity: OES: long-term 2.5 mg m^{-3} (as F). LD_{50} (rat, orl) 245 mg/kg

Aldrich: 21538-4
Fluka: 60240
Sigma: P1179

>>**Variant:** Mineral-form
Synonym(s): Carobbiite

CAS Registry Number: 12777-49-0
Molecular Formula: FK
Molecular Weight: 58.097
Percentage Composition: F 32.70%; K 67.30%
Source/Synthesis: Rare; from the lavas of Mt. Vesuvius
Physical Description: Cubic cryst.

>>**Derivative:** Dihydrate

CAS Registry Number: 13455-21-5
Molecular Formula: FH_4KO_2
Molecular Weight: 94.127
Accurate Mass: 93.98324
Percentage Composition: F 20.18%; H 4.28%; K 41.54%; O 34.00%
Source/Synthesis: Cryst. from aq. KF
Use/Importance: Commercially available. Combined with Bu_4NCl in MeCN, a "naked fluoride" mixt. is formed, with props. similar to Bu_4NF
Physical Description: Colourless monoclinic cryst., hygroscopic. Readily dehydrates on heating
Melting Point: Mp 41°
Solubility: V. sol. H_2O (349 g per 100 cm^3 at 18°); insol. EtOH
Other Data: ΔH_f° –1164 kJ mol^{-1}; ΔG_f° –1022 kJ mol^{-1}; S° 155 J K^{-1} mol^{-1}
Hazard & Toxicity: Corrosive, toxic

Aldrich: 22187-2
Fluka: 60241
Sigma: P6642

References: