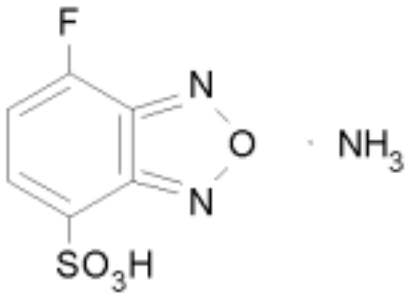
# ProductInformation

**7-FLUOROBENZO-2-OXA-1,3-DIAZOLE-4-SULFONIC ACID AMMONIUM**
Product Number **F4383**
Storage Temperature RT

CAS #: 84806-27-9
Synonyms: SBD-F[1], 4-Fluoro-7-Sulfobenzofurazan, Ammonium salt[2],

**Product Description**




Appearance: White to light yellow powder[3]
Molecular Formula: $C_6H_3FN_2O_4S{\cdot}NH_3$
Molecular Weight: 235.2

Method of preparation of SBD-F was reported.[1]

SBD-F is a sensitive and specific fluorescent labeling reagent for low molecular weight compounds and for macromolecules containing thiol groups.[1,4-10] SBD-F reacts with sulfhydryl groups (disulfides do not react with SBD-F and must first be reduced to thiols, for example using tributylphosphine)[10] to produce highly fluorescent compounds. SBD-F does not exhibit any fluorescence of its own and no fluorescent by-products are formed in the reaction with SBD-F.[1,8] Suggested optimal reaction conditions for formation of fluorescent derivatives are SBD-F (0.5 mM), 60°C, and pH 9.5 (0.1 M borate buffer containing 1 mM EDTA disodium) for one hour.[1] Additional procedures have been reported.[10] At pH 9.5, the inclusion of 1 mM EDTA in the buffer is important to prevent metal-catalyzed oxidation of thiols.[10] The rate of reaction of thiols with SBD-F gradually increases with increasing pH.[10] High fluorescence intensities are observed at pH 2-12 except for SBD-cysteine and SBD- (thiol containing amino acids) which require an acidic (pH 2) medium.[10]

For the SBD-F derivative:
Excitation wavelength: 380-385nm[1,4,5]
Emission wavelength: 515nm[1,4,5], 510nm[6]

SBD-F is suitable for the HPLC determination of biological thiols at the picomole level.[1] The detection limit of thiol compounds, glutathione, coenzyme A, cysteamine, homocysteine, N-acetylcysteine, cysteine and D-3-mercaptomethylpropanoyl-L-proline (captopril) were 100, 120, 160, 330, 390, 3600, 150 pmol/ml, respectively[1]. The amino acids, proline and alanine (contain no –SH groups), did not give any fluorescence with SBD-F. Some thiols (cysteine, glutathione and captopril) have also been determined by reaction with SBD-F then separated and quantified by HPLC.[7,10] The determination of SBD-thiols (both reduced and oxidized) in plasma by HPLC has been reported.[4,7] SBD-F has been used in HPLC methods for measuring total plasma and serum homocysteine levels.[4,5,8-10] SBD-F has been used in the determination of metallothionein in a tandem column HPLC method with an isocratic solvent system.[6] SBD-F has been used for determining the position of disulfide linkages of cysteine residues in proteins[10 –12] and for the detection of cystine containing peptides.[13] Positions of disulfide bonds in Yam acidic class IL (class IV) chitinase were determined by digestion of the chitinase. The resulting disulfide bonds containing peptides were separated by reversed-phase HPLC and detected using SBD-F[11]; SBD-F was employed in the determination of disulfide bridges in Factor Va heavy chain.[12]

**Storage/Stability**
The product is stable for 3 years when stored at room temperature and protected from light.[3]

**Preparation Instructions**
SBD-F has been solubilized in 1 M ammonium hydroxide at 50 mg/ml yielding a clear yellow to yellow-green solution.[3] The product is also freely soluble in deionized water. A 10 mg/ml solution has been prepared.[1] SBD-F solutions in water were reported to be stable for more than one week at 2-8°C.[1] SBD-F derivatives were stable at pH 9.5[1] for at least one week at room temperature when stored in the dark [1,5,6,9] and 0°[10] (derivatized samples may turn yellow because of the light sensitivity of SBD-F. Use of the derivatives did not seem to affect the assay for homocysteine determination in plasma).[9] SBD-F homocysteine complexes are more stable than o-phthaldialdehyde (OPA)-homocysteine complexes when both were stored in the dark .[5]

**References**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