

# PRODUCT INFORMATION



## CFDA-SE

Item No. 14456

CAS Registry No.: 150347-59-4

Formal Name: 3',6'-bis(acetyloxy)-3-oxo-2,5-dioxo-1-pyrrolidinyl ester-spiro[isobenzofuran-1(3H),9'-[9H]xanthene]-ar-carboxylic acid

Synonyms: 5(6)-Carboxyfluorescein diacetate succinimidyl ester, 5(6)-CFDA N-succinimidyl ester

MF:  $C_{29}H_{19}NO_{11}$

FW: 557.5

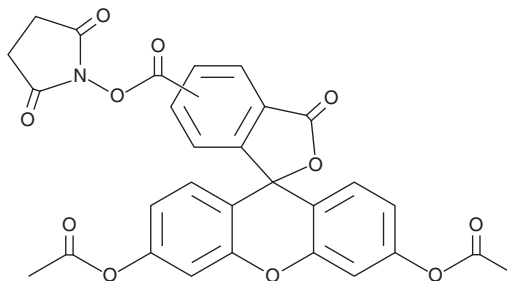
Purity:  $\geq 95\%$  (mixture of regioisomers)

Ex./Em. Max: 491/518 nm

Supplied as: A crystalline solid

Storage:  $-20^{\circ}\text{C}$

Stability:  $\geq 2$  years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

CFDA-SE is supplied as a crystalline solid. A stock solution may be made by dissolving the CFDA-SE in the solvent of choice. CFDA-SE is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of CFDA-SE in these solvents is approximately 20 and 30 mg/ml, respectively.

CFDA-SE is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, CFDA-SE should first be dissolved in DMF and then diluted with the aqueous buffer of choice. CFDA-SE has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

CFDA-SE is a stable, cell-permeable dye that consists of a fluorescein molecule containing two acetate moieties and a succinimidyl ester (SE) functional group.<sup>1</sup> Upon diffusion into the intracellular environment, the acetate groups are cleaved by cellular esterases leaving CFSE (Item No. 16802), which is fluorescent and not cell permeable.<sup>2</sup> CFSE covalently couples to intracellular molecules *via* its succinimidyl group and can be retained in cells for at least eight weeks.<sup>3</sup> CFDA-SE is often used to assay cell proliferation as it is partitioned with high fidelity between daughter cells for up to eight generational divisions.<sup>1,4,5</sup> CFSE, the cleavage product of CFDA-SE, displays excitation/emission maxima of 491/518 nm, respectively.<sup>3</sup>

### References

1. Lyons, A.B. *J. Immunol. Methods* **243**(1-2), 147-154 (2000).
2. Breeuwer, P., Drocourt, J., Rombouts, F.M., et al. *Appl. Environ. Microbiol.* **62**(1), 178-183 (1996).
3. Weston, S.A., and Parish, C.R. *J. Immunol. Methods* **133**(1), 87-97 (1990).
4. Parish, C.R., Glidden, M.H., Quah, B.J.C., et al. *Curr. Protoc. Immunol. Supp.* **84**, 4.9.1-4.9.13 (2009).
5. Lecoœur, H., Février, M., Garcia, S., et al. *J. Immunol. Methods* **253**(1-2), 177-187 (2001).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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