



## Product Specifications

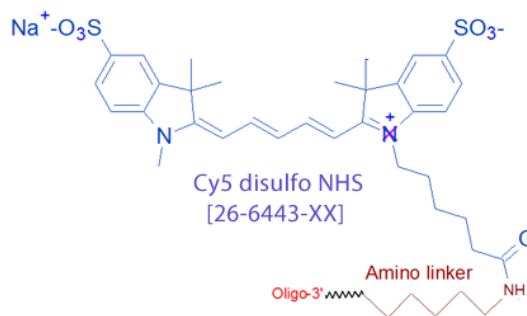
Custom Oligo Synthesis, antisense oligos, RNA oligos, chimeric oligos, Fluorescent dyes, Affinity Ligands, Spacers & Linkers, Duplex Stabilizers, Minor bases, labeled oligos, Molecular Beacons, siRNA, phosphonates Locked Nucleic Acids (LNA); 2'-5' linked Oligos

## Oligo Modifications

For research use only. Not for use in diagnostic procedures for clinical purposes.

### Cy5 disulfo NHS

Category	Fluorescent Dyes
Modification Code	Cy5-S2-N
Reference Catalog Number	26-6443
5 Prime	Y
3 Prime	Y
Internal	Y
Molecular Weight(mw)	533.63



Cy5 disulfo NHS modification is a post synthesis conjugation to a primary amino group thus an additional modification with an amino group is required. A C6 or C12 amino group can be placed at the 5' or for the 3' end a C3 or C7 amino and for internal positions an amino modified base is used, e.g Amino dT C6. The diSulfo- Cy5 NHS Ester is a hydrophilic version of Cy5 due to the two sulfo groups. This version is particularly helpful when the standard hydrophobic Cy5 version is not appropriate for the desired application. All NHS ester derivative modifications are post synthesis for oligos and requires a primary amino group on the oligo for conjugation. The amino group can be placed at either the 5' or 3' ends or internally as well. Cy5 can be used as a replacement for Alexa Fluor 647 Succinimidyl Ester, DyLight 650 NHS Ester, Colorado 645 XT A - NHS ester, Fluorescentred 647 reactive, CF647 succinimidyl ester and PromoFluor® -647, NHS ester for the required applications.

#### Near Infrared Fluorophore Spectral Data & Quencher Selection Guide

Fluorophore Name

Excitation Max, nm +/-10

Emission Max, nm +/-10

Extinction Coefficient\*

Color\*\*

Quencher

**Cy5 650 665 250,000**

**IRDye 650 NHS 650 665 230,000**

**AZ647 NHS 655 680 191,800**

**Cy5.5 684 710 198,000**

**IRDye 700 NHS 684 710 288,000**

**Cy7 NHS 740 773 199,000**

**IRDye 750 NHS 756 776 260,000**

**cy7.5 NHS 788 808 223,000**

**IRDye 800 NHS 795 819 240,000**

**\* Extinction coefficient at  $\lambda$  (max) in  $\text{cm}^{-1}\text{M}^{-1}$ . \*\* Typical emission color seen through the eyepiece of a conventional fluorescence microscope with appropriate filters. Near-IR region. Human vision is insensitive to light beyond  $\sim 650$  nm; it is not possible to view near-IR fluorescent dyes.**

t dyes.

[Click here for a list of fluorophores.](#)

[Click here for list of quenchers.](#)

#### References

1. Livak, K.J., Flood, S.J.A., Marmaro, J., Giusti, W., Deetz, K. Oligonucleotides with fluorescent dyes at opposite ends provide a quenched probe system useful for detecting PCR product and nucleic acid hybridization. *PCR Methods Appl.* (1995), 4: 1-6.
2. Thelwell, N., Millington, S., Solinas, A., Booth, J., Brown, T. Mode of action and application of Scorpion primers to mutation detection. *Nucleic Acids Res.* (2000), 28: 3752-3761.
3. Tyagi, S., Kramer, F.R. Molecular beacons: probes that fluoresce upon hybridization. *Nat. Biotechnol.* (1996), 14: 303-308.
4. Stoecker, K., Dorninger, C., Daims, H., Wagner, M. Double Labeling of Oligonucleotide Probes for Fluorescence In Situ Hybridization (DOPE-FISH) Improves Signal Intensity and Increases rRNA Accessibility. *Appl. Environ. Microb.* (2010), 76: 922-926.

Reaction scheme for primary amine labelled oligos with NHS ester is shown in the figure below.

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