

³⁵S Methionine product table

Product	When to use this formulation	Radioactive Concentration/Specific Activity	Buffer	Storage and stability	Catalog number
EXPRESS [³⁵ S]-protein labeling mix	-Cell labeling only -Contains both ³⁵ S-methionine and ³⁵ S-cysteine (73:22) from E. coli hydrolysate	11 mCi/mL ; 1175 Ci/mmol	50 mM Tricine pH 7.4 10 mM β-mercaptoethanol	Shipped on dry ice. Store at -80°C. Use within 1 month.	NEG072
	-Cell labeling only -EasyTag formulation (can be stored at 4 °C) -Contains both ³⁵ S-methionine and ³⁵ S-cysteine (73:22) from E. coli hydrolysate.	11 mCi/mL; 1175 Ci/mmol	-25 mM Tricine (pH 7.8) -With stabilizer (but no blue EasyTag dye) - <u>No</u> β-mercaptoethanol	Shipped ambient. Store at 4°C. Use within 1 month of receipt	NEG772
³⁵ S-methionine	-Cell labeling or IVT* -High radioactive concentration	43.3 mCi/mL; 1175 Ci/mmol	50 mM Tricine (pH 7.8) 10 mM β-mercaptoethanol	Shipped in dry ice, Store at -20°C or lower. Use within 1 month of receipt	NEG009C
	-Cell labeling or IVT -Tricine-stabilized	10.2 mCi/mL; 1175 Ci/mmol	50 mM Tricine (pH 7.8) 10 mM β-mercaptoethanol	Shipped in dry ice, Store at -20°C or lower. Use within 1 month of receipt	NEG009A
	-Cell labeling or IVT -EasyTag formulation can be stored at 4°C	10.2 mCi/mL; 1175 Ci/mmol	-25 mM Tricine (pH 7.8) - Stabilizer containing blue dye -10 mM β-mercaptoethanol	Shipped ambient, Store at 4°C or lower. Use within 1 month of receipt	NEG709A
	Cell labeling or IVT	31.5 mCi/mL; 1175 Ci/mmol	10 mM β-mercaptoethanol	Shipped in dry ice, Store at -20°C or lower. Use within 1 month of receipt	NEG009L
	Cell labeling or IVT	11 mCi/mL; 1175 Ci/mmol	10 mM β-mercaptoethanol	Shipped in dry ice, Store at -20°C or lower. Use within 1 month of receipt	NEG009H
	Cell labeling or IVT (developed for IVT)	11 mCi/mL; 1175 Ci/mmol	10 mM β-mercaptoethanol	Shipped in dry ice, Store at -20°C or lower. Use within 1 month of receipt	NEG009T

* IVT stands for *In Vitro* Translation

Refer to next page for guidance on how to select a methionine from the table above.

Guidelines for choosing a methionine radiochemical from the table above:

- Product
 - EXPRE³⁵S³⁵S labeling mix contains both ³⁵S-methionine and ³⁵S-cysteine. The material is prepared from a crude extract of *E. coli*.
 - The relative concentration of Methionine and Cysteine in EXPRESS labeling mix is 73% to 22%. See [tech data sheet](#).
- When to use...
 - Cell labeling experiments refer to cell-based assays
 - IVT refers to cell-free *in vitro* translation assays (for example, using a reticulocyte lysate)
- Radioactive concentration/specific activity
 - Radioactive concentration is sometimes used to determine what volume of radiochemical to use to make your working solutions, or what volume of radiochemical to add to your assay. If your protocol dictates that you add a certain amount of Curies to each reaction, you will use the radioactive concentration to determine how much to pipette.
 - All products are currently offered at the same specific activity. Specific activity indicates the amount of radioactivity per millimole of methionine. The maximum theoretical specific activity for ³⁵S is ~1488 Curies per millimole of sulfur. Because there is only one possible labeling position on these radiochemicals, a specific activity of 1175 Ci/mmol indicates that a large proportion of the molecules in the vial are labeled on the calibration date.
 - Molar concentration (of both hot and cold methionine in the stock vial) can be determined by taking the radioactive concentration and dividing by the specific activity. Make sure your units cancel out correctly. If your protocol is telling you to add a higher molar concentration than what the product is supplied as, you may need to increase the molar concentration by adding cold methionine. This will decrease the specific activity of methionine in the assay.
- Buffer
 - Tricine is a stabilizing buffer. Products packed in tricine should have greater stability through multiple manipulations, though we still recommend using ³⁵S-methionine products within one month of receipt.
 - EasyTag products are in a proprietary buffer formulation that allows the product to be stored at 4 °C
 - β-mercaptoethanol is a reducing agent, and helps to slow the build-up of volatile ³⁵S by-products in the stock vial over time. However, β-mercaptoethanol can be somewhat toxic to cells. Regardless of which formulation you chose, always take appropriate safety precautions when working with radioactivity – talk to your radiation safety officer for more guidance.
- Storage and stability
 - Most products need to be stored at -20 °C or lower. EasyTag products can be stored at 4 °C.
 - We recommend you use ³⁵S-methionine within one month of receipt.