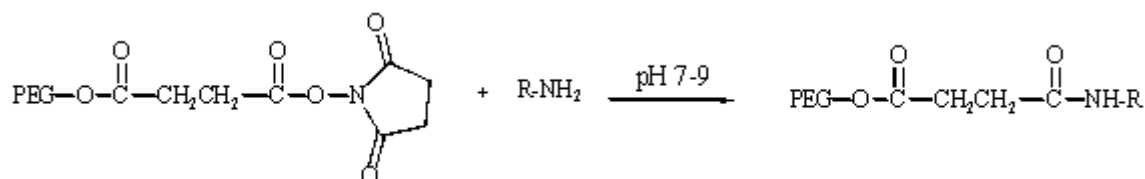


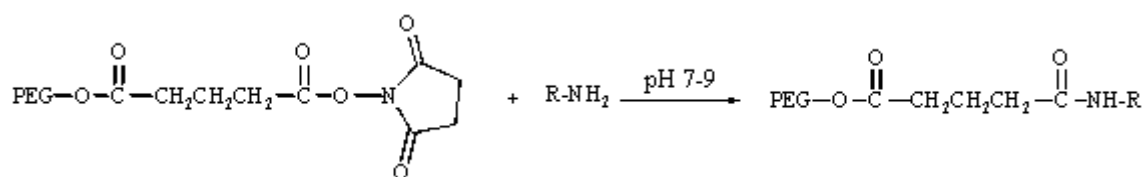
PEGylation reagents (linkers, crosslinkers and labels)

AMINE PEGylation

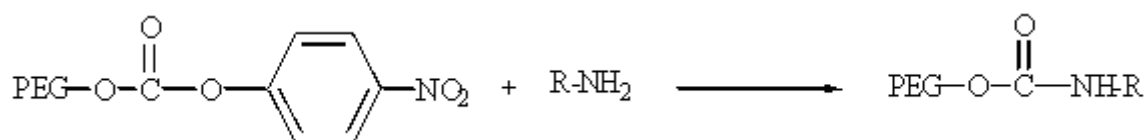
- **PEG-SS** (Succinimidyl Succinate) pegylates amine groups under mild conditions by forming amide bond. The ester linkage in the backbone is susceptible to hydrolytic cleavage.



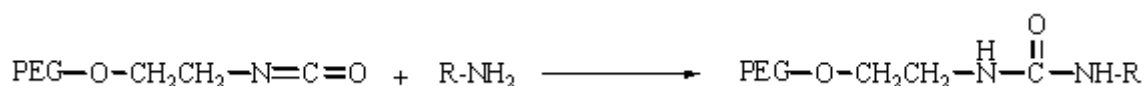
- **PEG-SG** (Succinimidyl Glutarate) pegylates amine groups of the target compound. The PEG-SG may be more resistant to hydrolysis than the PEG-SS because of an additional CH₂ chain.



- **PEG-NPC** (p-nitrophenyl carbonate) is also reactive toward amines, and forms a stable urethane linkage.



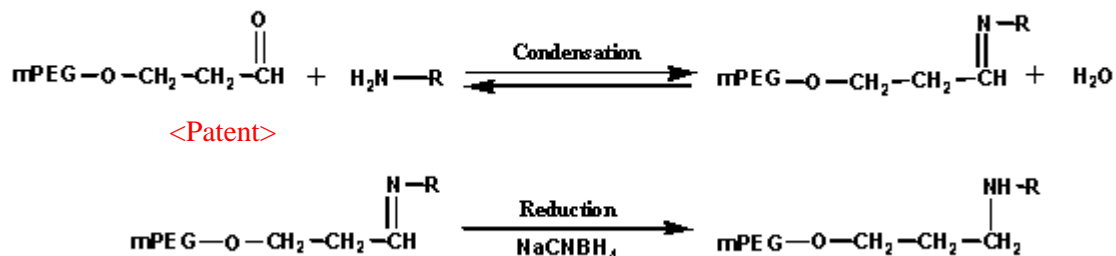
- **PEG-isocyanate** is also a useful derivative for pegylation of amine groups resulting in a stable urethane linkage.



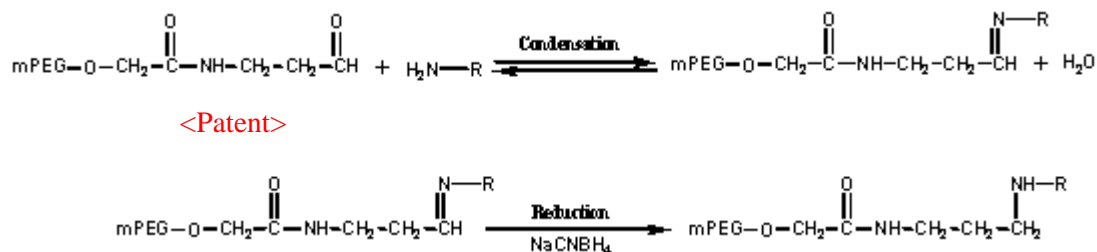
NT-PEGYLs

◆ **PEG-aldehyde** may pegylate amines through sodium cyanoborohydride reduction. The reaction pH may be important for target selectivity, and N-terminal amine pegylation may be at around pH 5.

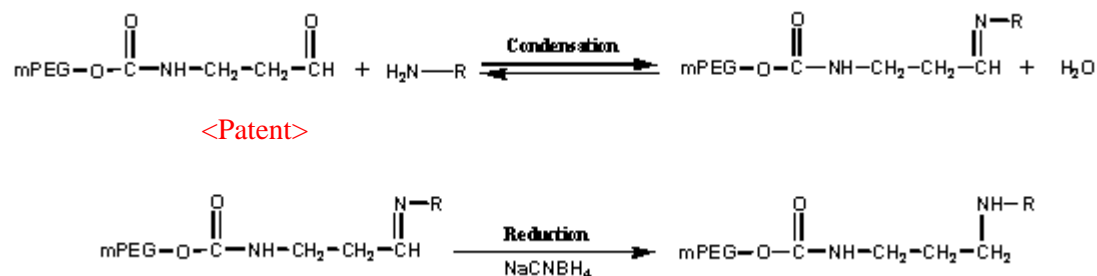
- mPEG-Propionaldehyde



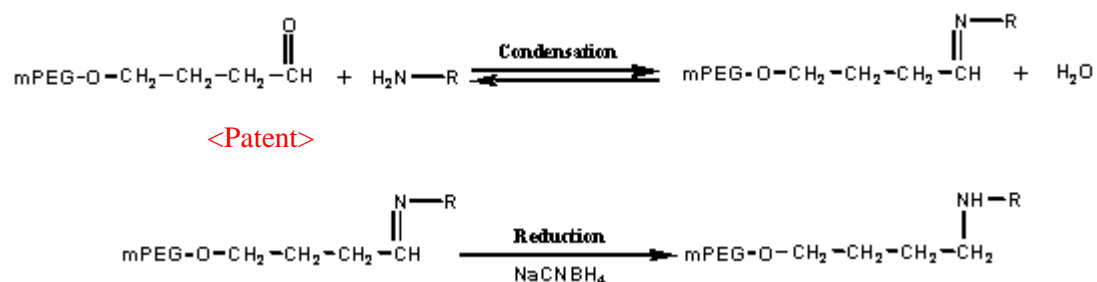
- mPEG-amide-Propionaldehyde



- mPEG-urethane-Propionaldehyde



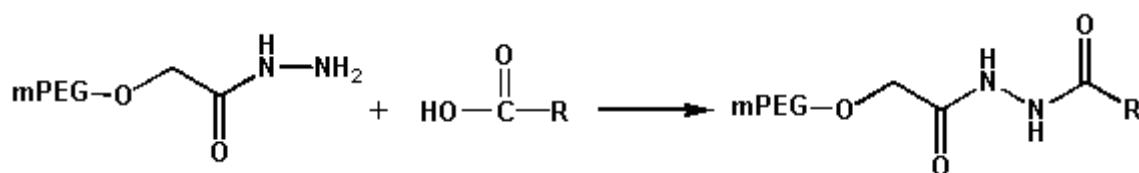
- mPEG-Butylaldehyde



CARBOXYL Pegylation

•**PEG-hydrazide** can pegylate carboxyl group quite selectively in presence of N,N'-dicyclohexylcarbodiimide (DCC), or in presence of a water soluble coupling agent such as N-(3-dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride (EDC).

The very low pKa (~3) of the hydrazide group allows carboxyl pegylation in acidic media in presence of EDC. The carboxyl groups of a protein which are readily activated with EDC at mild acidic pH, tend to react readily with PEG-hydrazide, whereas amino groups of the protein remain non-active.

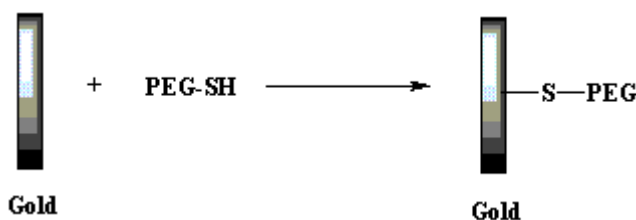


References

1. Andrez, H., Richter, G.C., Pfannemuller, B., Makromol. Chem. 1978, 179, 301-312.
2. Rubinstein, M., Simon, S., Bloch, R., US Patent 4,101,380 (1978)
3. Davis, F.F., Van Es, T., Palczuk, N.C., US Patent 4,179,337 (1979)
4. Shimizu, K., Nakahara, T., Kinoshita, T., US Patent 4,495,285 (1985)
5. Persson, S., Olde, B., J. Chromatogr., 1988, 457, 183-193.
6. Zalipsky S. and Menon-Rudolph, S., Polyethylene Glycol, pp318-341, Chapter 21. Hydrazide derivatives of polyethylene glycol and their bioconjugates, 1997 American Chemical Society.

GOLD SURFACE PEGylation

•**PEG-thiol** pegylates gold surface with high level of specificity.



The gold-thiol reaction may be viewed as an oxidative addition of the S-H bond to the gold, followed by a reductive elimination of the hydrogen.

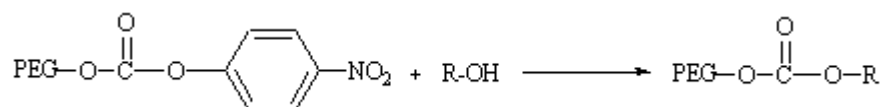


HYDROXYL PEGylation

●**PEG-epoxide** pegylates hydroxyl groups at a mild reactivity and is most effectively coupled at higher pH(8.5-9.5). The PEG-epoxide may also pegylate hydroxyl, amine, thiol groups. The PEG-epoxide shows excellent water stability at basic pH.



●**PEG-NPC** also pegylates hydroxyl groups

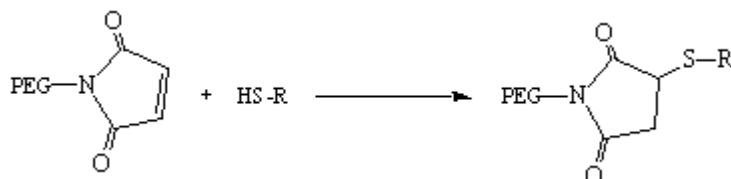


●**PEG-isocyanate** also pegylates hydroxyl groups yielding stable urethane linkage. However, its reactivity may be best exploited for pegylating non-peptide moieties such as drugs, hydroxyl-containing matrices for chromatography, and also to produce biocompatible surfaces.

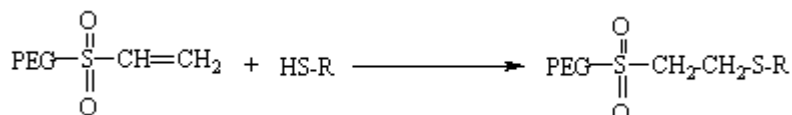


THIOL PEGylation

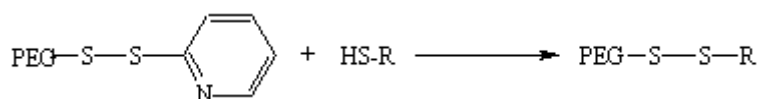
•**PEG-maleimide** pegylates thiols of the target compound in which the double bond of the maleimic ring breaks to connect with the thiol. The rate of reaction is pH dependent and best conditions are found around pH 8. But when the pH is higher than 8 and organic co-solvents are present, it has been known cause a side-reaction in which PEG-maleimide may react with amines, although this side-reaction is significantly slower.



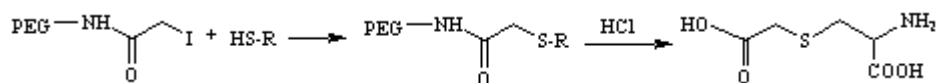
•**PEG-vinylsulfone** pegylates thiols of the target compound in the same way as in PEG-maleimide.



•**PEG-orthopyridyl-disulfide (OPSS)** also pegylates thiols resulting in disulfide bond. The conjugation can be decoupled by treatment with reductase such as NaBH₄.



•**PEG-iodoacetamide** pegylates thiols to form stable thioether bonds in mild basic media. This type of conjugation presents an interesting aspect in that by strong acid analysis the pegylated cysteine residue of the protein can give rise to carboxymethylcysteine which can be evaluated by a standard amino acid analysis (for example, amino acid sequencing), thus offering a method to verify the occurrence of the reaction.

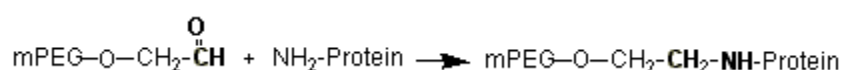
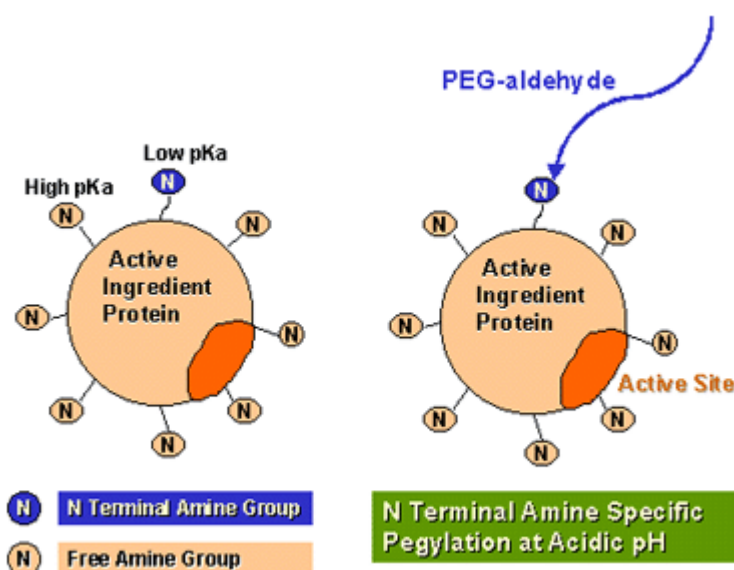


N-TERMINAL PEGylation

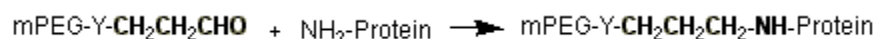
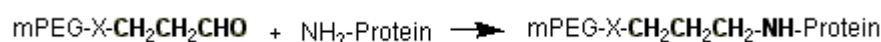
PEG can be attached to the N-terminal amino group of proteins and peptides. This is called N-terminal pegylation. The N-terminal pegylation may allow advantage in purification of the conjugates. It is also believed that the N-terminal pegylation may better preserve bioactivity as compared to a random pegylation of amino group of lysine residues. The agents used in achieving the N-terminal specific Pegylation are PEG-aldehydes. This is facilitated by the difference in pKa values of the amino group of lysines (~10) and of amino group of N-terminal amino acid (~7.6- 8.0), which allows pH dependent nucleophilic attacks to the electrophilic PEG-aldehydes.

PEG-aldehyde: PEG-aldehyde may pegylate N-terminal amino group of peptides and proteins. The reaction pH is important for the N-terminal amine specific pegylation and the pH may be at around pH 5.

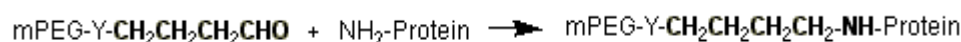
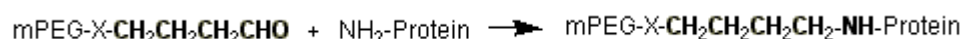
N-terminal pegylation may be conducted, for example, in 100 mM sodium acetate or 100 mM sodium biphosphate buffer at pH 5.0~6.0. The buffer may additionally contain 20 mM sodium cyanoborahydride. The molar ratio of compound to mPEG-aldehyde may be 1:5 ~ 1:10. The pegylation is then stirred overnight at ambient or refrigeration temperature.



PEG-propionaldehyde: several novel PEG-propionaldehydes were developed to overcome the relatively nonspecific and weak N-terminal pegylation of PEG-aldehyde.



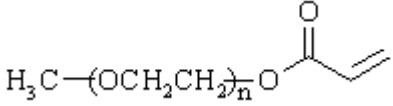
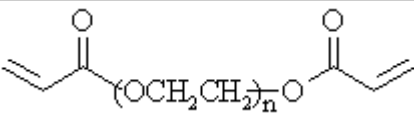
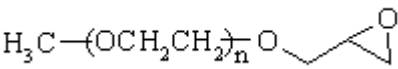
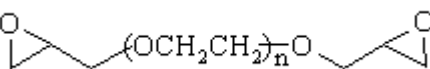
PEG-butylaldehyde: several novel PEG-butylaldehydes were developed that can also be useful for N-terminal pegylation.



Raw material mPEG

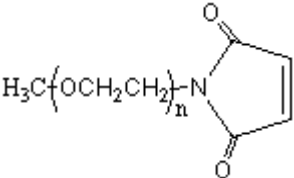
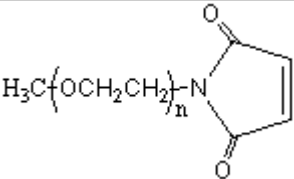
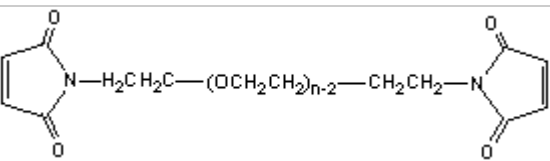
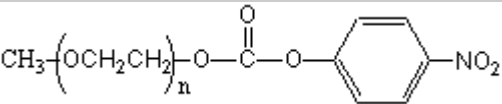
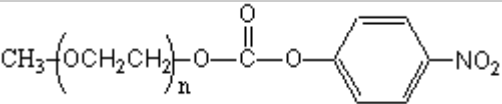
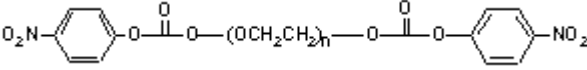
Catalog Number	Molecular Weight Available	Product Name	Price	Specification	Chemical Structure
P1OH-1	1K	mPEG-OH	Please Inquire	PDI \leq 1.05 Diol Content \leq 2%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$
P1OH-2	2K	mPEG-OH	Please Inquire	PDI \leq 1.05 Diol Content \leq 2%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$
P1OH-5	5K	mPEG-OH	Please Inquire	PDI \leq 1.05 Diol Content \leq 2%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$
P1OH-10	10K	mPEG-OH	Please Inquire	PDI \leq 1.1 Diol Content \leq 2%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$
P1OH-20	20K	mPEG-OH	Please Inquire	PDI \leq 1.1 Diol Content \leq 2%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$
P1OH-X	Any M.W. between 1K and 30K	mPEG-OH	Please Inquire	PDI \leq 1.1 Diol Content \leq 3%	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{OH}$

Mono- & Bi-Functional PEG Derivatives

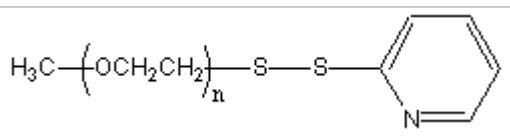
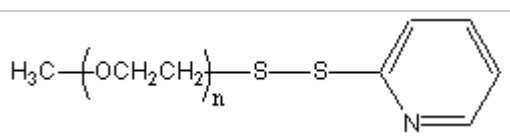
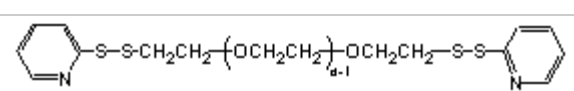
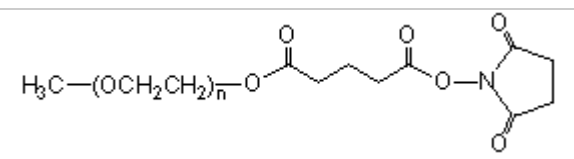
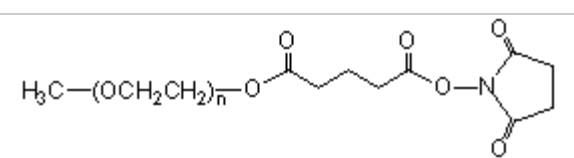
Catalog Number	Molecular Weight	Product Name	Price	Specification	Chemical Structure
P1AC-30	30K	mPEG-acrylate	Please inquire	Activity $\geq 95\%$,	
P1AC-20	20K				
P1AC-12	12K				
P1AC-10	10K				
P1AC-5	5K	mPEG-acrylate	Please inquire	Activity $\geq 98\%$,	
P1AC-2	2K				
P2AC-10	10K	PEG-(acrylate) ₂	Please inquire	Activity $\geq 98\%$,	
P2AC-8	8K				
P2AC-6	6K				
P2AC-3	3.4K				
P2AC-2	2K				
P1AM-30	30K	mPEG-amine	Please inquire	Activity $\geq 80\%$,	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{NH}_2$
P1AM-20	20K				
P1AM-12	12K				
P1AM-10	10K				
P1AM-5	5K	mPEG-amine	Please inquire	Activity $\geq 90\%$,	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{NH}_2$
P1AM-2	2K				
P2AM-10	10K	PEG-(amine) ₂	Please inquire	Activity $\geq 90\%$,	$\text{H}_2\text{N}-\text{CH}_2\text{CH}_2-(\text{OCH}_2\text{CH}_2)_{n-2}-\text{O}-\text{CH}_2\text{CH}_2-\text{NH}_2$
P2AM-8	8K				
P2AM-6	6K				
P2AM-3	3.4K				
P2AM-2	2K				
P1EP-20	20K	mPEG-epoxide	Please inquire	Activity $\geq 95\%$	
P1EP-12	12K				
P1EP-10	10K				
P1EP-5	5K				
P1EP-2	2K				
P2EP-10	10K	PEG-(epoxide) ₂	Please inquire	Activity $\geq 95\%$,	
P2EP-8	8K				
P2EP-6	6K				

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P2EP-3	3.4K				
P2EP-2	2K				
P1MAL-30	30K	mPEG-maleimide	Please inquire	Activity $\geq 70\%$,	
P1MAL-20	20K	mPEG-maleimide	Please inquire	Activity $\geq 80\%$,	
P1MAL-12	12K	mPEG-maleimide	Please inquire	Activity $\geq 80\%$,	
P1MAL-10	10K				
P1MAL-5	5K	mPEG-maleimide	Please inquire	Activity $\geq 99\%$,	
			Please inquire	Activity $\geq 85\%$,	
P1MAL-2	2K	mPEG-maleimide	Please inquire	Activity $\geq 80\%$,	
P2MAL-10	10K	PEG-(maleimide) ₂	Please inquire	Activity $\geq 80\%$,	
P2MAL-8	8K				
P2MAL-6	6K				
P2MAL-3	3.4K				
P2MAL-2	2K				
P1NPC-30	30K	mPEG-nitrophenyl carbonate	Please inquire	Activity $\geq 95\%$,	
P1NPC-20	20K				
P1NPC-12	12K				
P1NPC-10	10K				
P1NPC-5	5K	mPEG-nitrophenyl carbonate	Please inquire	Activity $\geq 98\%$,	
P1NPC-2	2K				
P2NPC-10	10K	PEG-(nitrophenyl carbonate) ₂	Please inquire	Activity $\geq 95\%$,	
P2NPC-8	8K				

NT-PEGYLs

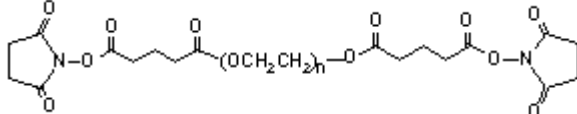
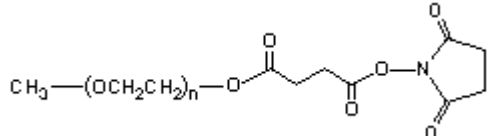
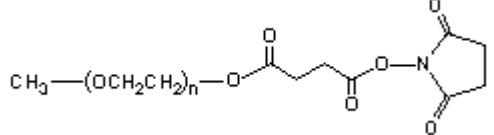
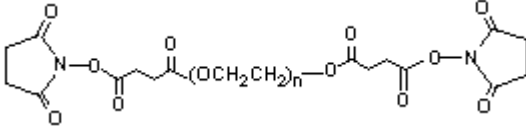
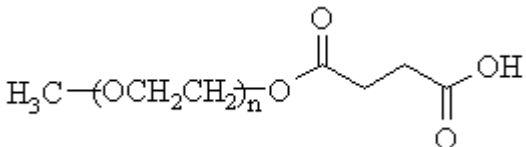
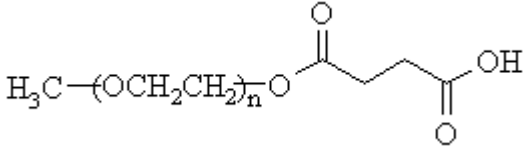
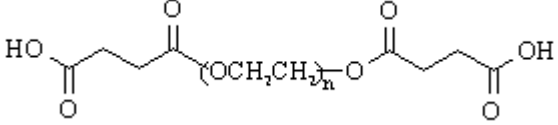
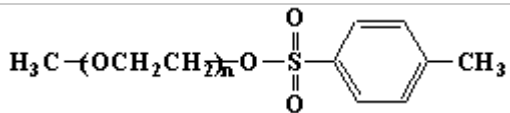
P2NPC-6	6K	PEG-(nitrophenyl carbonate) ₂	Please inquire	Activity ≥ 98 %,	
P2NPC-3	3.4K				
P2NPC-2	2K				
P1OP-30	30K	mPEG-orthopyridyl disulfide	Please inquire	Activity ≥ 70 %,	
P1OP-20	20K				
P1OP-12	12K	mPEG-orthopyridyl disulfide	Please inquire	Activity ≥ 70 %,	
P1OP-10	10K				
P1OP-5	5K	mPEG-orthopyridyl disulfide	Please inquire	Activity ≥ 70 %,	
P1OP-2	2K				
P2OP-10	10K	PEG-(orthopyridyl disulfide) ₂	Please inquire	Activity ≥ 70 %,	
P2OP-8	8K				
P2OP-6	6K				
P2OP-3	3.4K				
P2OP-2	2K				
P1SH-30	30K	mPEG-sulfhydryl	Please inquire	Activity ≥ 70 %,	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{SH}$
P1SH-20	20K				
P1SH-12	12K	mPEG-sulfhydryl	Please inquire	Activity ≥ 70 %,	
P1SH-10	10K				
P1SH-5	5K	mPEG-sulfhydryl	Please inquire	Activity ≥ 70 %,	$\text{H}_3\text{C}-(\text{OCH}_2\text{CH}_2)_n\text{SH}$
P1SH-2	2K				
P2SH-10	10K	PEG-(sulfhydryl) ₂	Please inquire	Activity ≥ 70 %,	$\text{HS}-\text{H}_2\text{CH}_2\text{C}-(\text{OCH}_2\text{CH}_2)_{n-1}\text{SH}$
P2SH-8	8K				
P2SH-6	6K				
P2SH-3	3.4K				
P2SH-2	2K				
P1SG-30	30K	mPEG-succinimidyl glutarate	Please inquire	Activity ≥ 95 %,	
P1SG-20	20K				
P1SG-12	12K				
P1SG-10	10K				
P1SG-5	5K	mPEG-succinimidyl glutarate	Please inquire	Activity ≥ 98 %,	
P1SG-2	2K				

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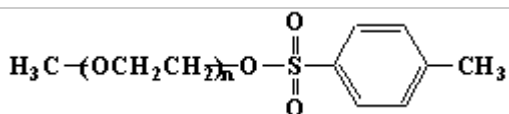
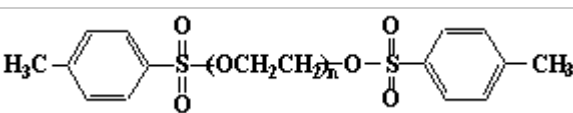
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P2SG-8	8K				
P2SG-6	6K				
P2SG-3	3.4K				
P2SG-2	2K				
P1SS-30	30K	mPEG-succinimidyl succinate	Please inquire	Activity \geq 95 %,	
P1SS-20	20K				
P1SS-12	12K				
P1SS-10	10K				
P1SS-5	5K	mPEG-succinimidyl succinate	Please inquire	Activity \geq 98 %,	
P1SS-2	2K				
P2SS-10	10K	PEG-(succinimidyl succinate) ₂	Please inquire	Activity \geq 98 %,	
P2SS-8	8K				
P2SS-6	6K				
P2SS-3	3.4K				
P2SS-2	2K				
P1SA-30	30K	mPEG-succinic acid	Please inquire	Activity \geq 95 %,	
P1SA-20	20K				
P1SA-12	12K				
P1SA-10	10K				
P1SA-5	5K	mPEG-succinic acid	Please inquire	Activity \geq 98 %,	
P1SA-2	2K				
P2SA-10	10K	PEG-(succinic acid) ₂	Please inquire	Activity \geq 98 %,	
P2SA-8	8K				
P2SA-6	6K				
P2SA-3	3.4K				
P2SA-2	2K				
P1TS-30	30K	mPEG-tosylate	Please inquire	Activity \geq 95 %,	
P1TS-20	20K				
P1TS-12	12K				
P1TS-10	10K				

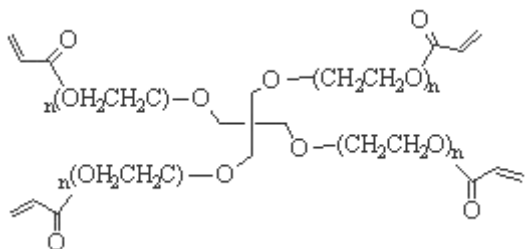
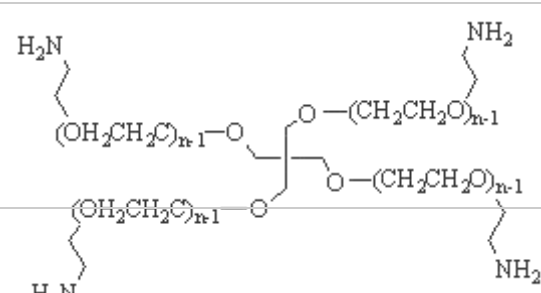
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NT-PEGYLs

P1TS-5	5K	mPEG-tosylate	Please inquire	Activity $\geq 95\%$,	
P1TS-2	2K				
P2TS-10	10K	PEG-(tosylate) ₂	Please inquire	Activity $\geq 95\%$,	
P2TS-8	8K				
P2TS-6	6K				
P2TS-3	3.4K				
P2TS-2	2K				

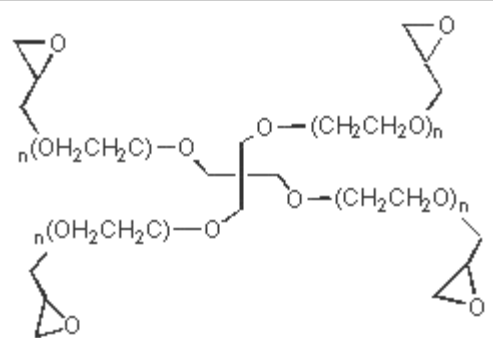
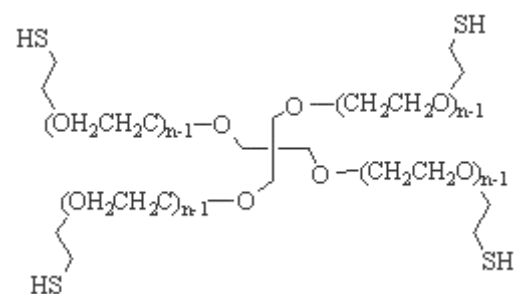
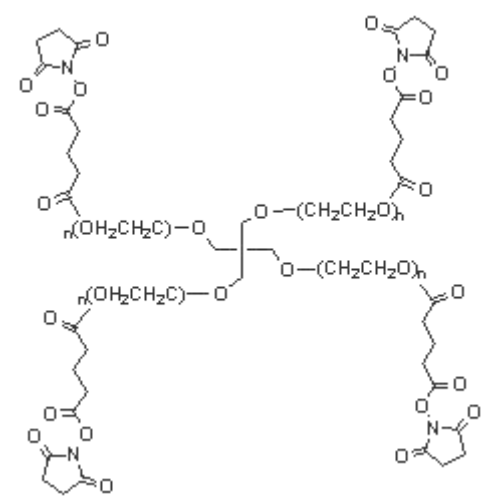
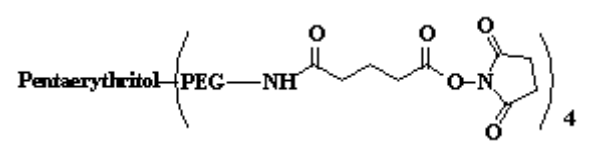
4-Arm PEG Derivatives	Catalog Number	M.W.	Price	Specification	Chemical Structure
4-Arm PEG-OH	P4OH-10	10K	Please inquire	Main peak fraction : $\geq 90\%$	
	P4OH-13	13K			
	P4OH-15	15K			
	P4OH-17	17K			
	P4OH-20	20K			
4-Arm PEG-Methoxy	P4M-10	10K	Please inquire	Main peak fraction : $\geq 90\%$	
	P4M-13	13K			
	P4M-15	15K			
	P4M-17	17K			
	P4M-20	20K			
4-Arm PEG-Acrylate	P4AC-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 95\%$	
	P4AC-13	13K			
	P4AC-15	15K			
	P4AC-17	17K			
	P4AC-20	20K			
4-Arm PEG-Amine	P4AM-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 90\%$	
	P4AM-13	13K			

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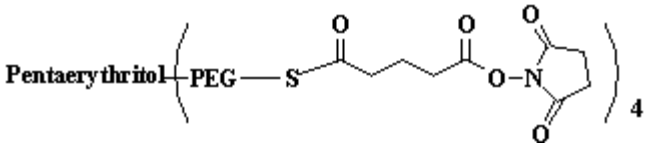
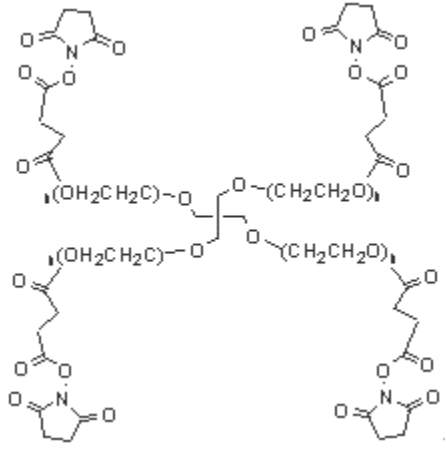
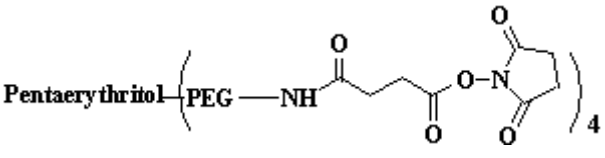
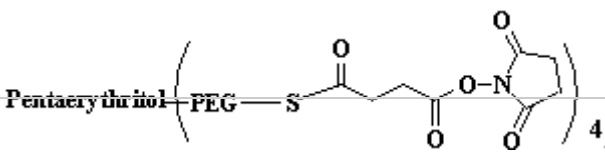
NT-PEGYLs

	P4AM-15	15K			
	P4AM-17	17K			
	P4AM-20	20K			
4-Arm PEG-Epoxy	P4EP-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 95\%$	
	P4EP-13	13K			
	P4EP-15	15K			
	P4EP-17	17K			
	P4EP-20	20K			
4-Arm PEG-Sulfhydryl	P4SH-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 70\%$	
	P4SH-13	13K			
	P4SH-15	15K			
	P4SH-17	17K			
	P4SH-20	20K			
4-Arm PEG-Succinimidyl Glutarate	P4SG-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 95\%$	
	P4SG-13	13K			
	P4SG-15	15K			
	P4SG-17	17K			
	P4SG-20	20K			
4-Arm PEG-amide-succinimidyl Glutarate	P4ASG-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 90\%$	
	P4ASG-13	13K			

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NT-PEGYLs

	P4ASG-15	15K			
	P4ASG-17	17K			
	P4ASG-20	20K			
4-Arm PEG-thio-Succinimidyl Glutarate	P4TSG-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 70\%$	
	P4TSG-13	13K			
	P4TSG-15	15K			
	P4TSG-17	17K			
	P4TSG-20	20K			
4-Arm PEG-Succinimidyl Succinate	P4SS-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 95\%$	
	P4SS-13	13K			
	P4SS-15	15K			
	P4SS-17	17K			
	P4SS-20	20K			
4-Arm PEG-amide-Succinimidyl Succinate	P4ASS-10	10K	Please inquire	Main peak fraction : $\geq 90\%$ Activity : $\geq 90\%$	
	P4ASS-13	13K			
	P4ASS-15	15K			
	P4ASS-17	17K			
	P4ASS-20	20K			
4-Arm PEG-thio-	P4TSS-10	10K	Please inquire	Main peak fraction : $\geq 90\%$	

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NT-PEGYLs

Succinimidyl Succinate	P4TSS-13	13K		Activity : $\geq 70\%$	
	P4TSS-15	15K			
	P4TSS-17	17K			
	P4TSS-20	20K			

- 4-arm PEG is made of pentaerythritol core.
- Main peak fraction represents percentage of 4-arm PEG, and the rest is mostly 3-arm PEG.
- Activity represents the degree of end group substitution with functional derivatives.
- Other derivatives may be available with custom synthesis.

Unique* mPEG-propionaldehydes

<Patent>

Type	Product Name	Catalog Number	M.W.	Price	Specification	Chemical Structure
mPEG-propionaldehyde	mPEG-propionaldehyde	P1PAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \text{CH}_2\text{CH}_2\text{CHO}$
		P1PAL-10	10K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1PAL-20	20K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1PAL-30	30K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
	mPEG-amide-propionaldehyde	P1APAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \text{CH}_2 - \overset{\text{O}}{\parallel} \text{C} - \text{NHCH}_2\text{CH}_2\text{CHO}$
		P1APAL-10	10K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1APAL-20	20K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1APAL-30	30K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
	mPEG-urethane-propionaldehyde	P1TPAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \overset{\text{O}}{\parallel} \text{C} - \text{NHCH}_2\text{CH}_2\text{CHO}$

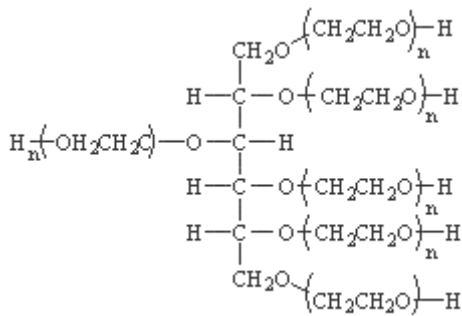
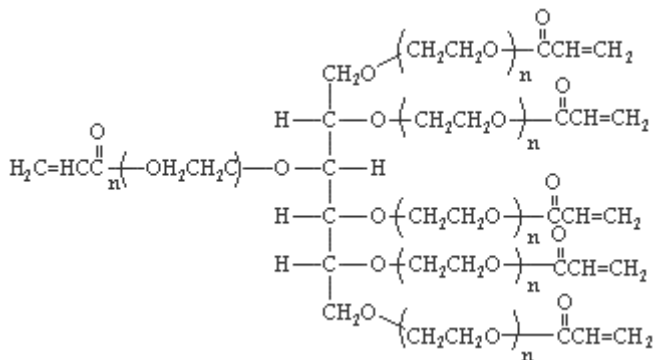
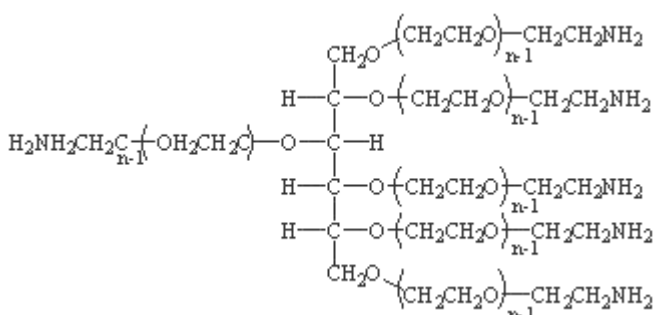
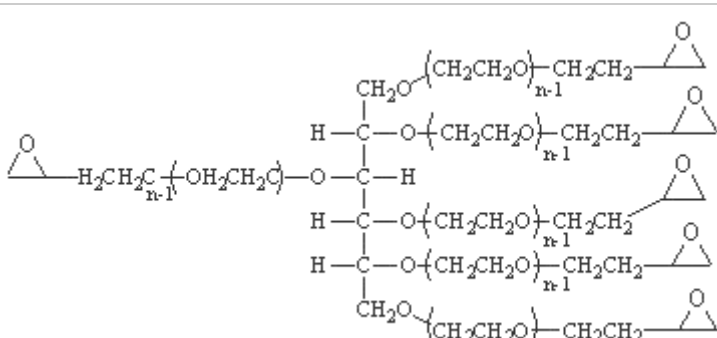
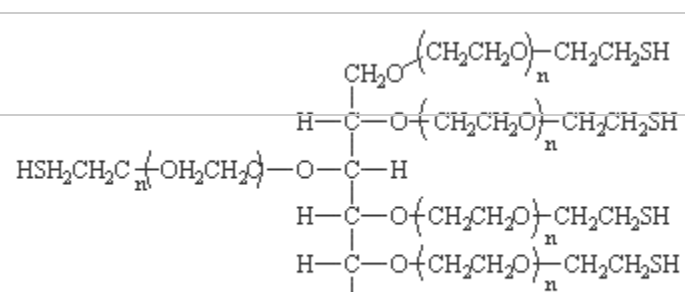
Unique* mPEG-butylaldehydes

<Patent>

Type	Product Name	Catalog Number	M.W.	Price	Specification	Chemical Structure
mPEG-butylaldehyde	mPEG-butylaldehyde	P1BAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \text{CH}_2\text{CH}_2\text{CH}_2\text{CHO}$
		P1BAL-10	10K	Please inquire	Activity ≥ 90%	
		P1BAL-20	20K	Please inquire	Activity ≥ 90%	
		P1BAL-30	30K	Please inquire	Activity ≥ 90%	
	mPEG-amide-butylaldehyde	P1ABAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \text{CH}_2\overset{\text{O}}{\underset{\text{ }}{\text{C}}} - \text{NHCH}_2\text{CH}_2\text{CH}_2\text{CHO}$
		P1ABAL-10	10K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1ABAL-20	20K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
		P1ABAL-30	30K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	
	mPEG-urethane-butylaldehyde	P1TBAL-5	5K	Please inquire	Activity ≥ 90% Peroxide ≤ 10ppm	$\text{CH}_3 \left(\text{OCH}_2\text{CH}_2 \right)_n \text{O} - \overset{\text{O}}{\underset{\text{ }}{\text{C}}} - \text{NHCH}_2\text{CH}_2\text{CH}_2\text{CHO}$

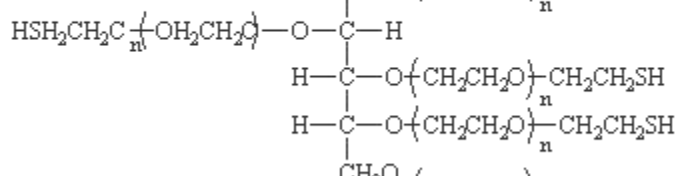
Unique* 6-Branched PEG reagents

<Patent>

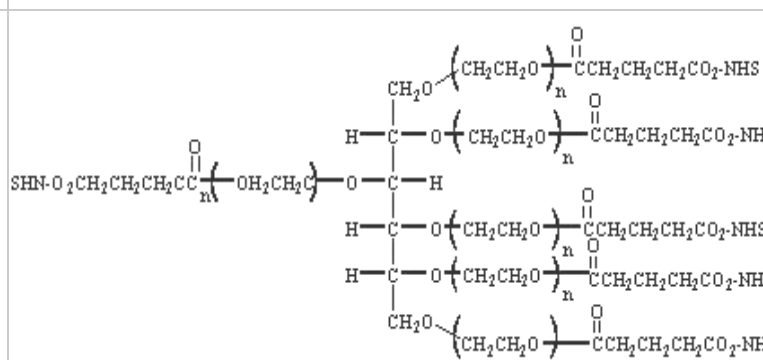
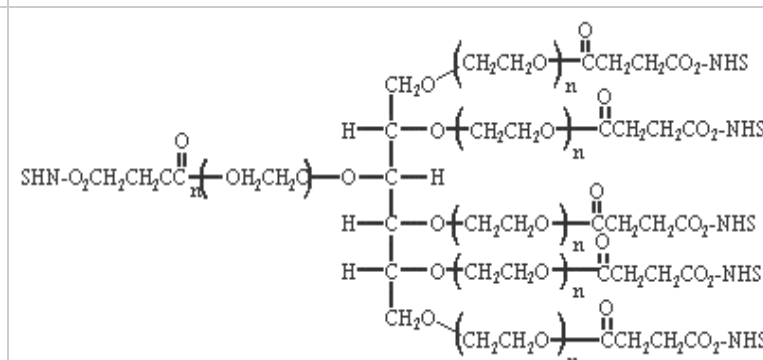
Type	Product Name	Catalog Number	M.W.	Price	Specification	Chemical Structure
6-arm PEG derivatives	6-arm PEG-OH (raw material)	P6OH-10	10K	Please inquire	Main Peak Fraction $\geq 90\%$	
		P6OH-15	15K			
		P6OH-20	20K			
	6-arm PEG-acrylate	P6AC-10	10K	Please inquire	Main Peak Fraction $\geq 90\%$ Activity $\geq 95\%$	
		P6AC-15	15K			
		P6AC-20	20K			
	6-arm PEG-amine	P6AM-10	10K	Please inquire	MPF $\geq 90\%$ Activity $\geq 90\%$	
		P6AM-15	15K			
		P6AM-20	20K			
	6-arm PEG-epoxide	P6EP-10	10K	Please inquire	MPF $\geq 90\%$ Activity $\geq 90\%$	
		P6EP-15	15K			
		P6EP-20	20K			
	6-arm PEG-sulphydryl	P6SH-10	10K	Please inquire	MPF $\geq 90\%$ Activity $\geq 70\%$	

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NT-PEGYLs

	P6SH-15	15K			
	P6SH-20	20K			
6-arm PEG-succinimidyl-glutarate	P6SG-10	10K	Please inquire	MPF≥90% Activity≥95%	
	P6SG-15	15K			
	P6SG-20	20K			
6-arm PEG-°succinimidyl-°succinate	P6SS-10	10K	Please inquire	MPF≥90% Activity≥95%	
	P6SS-15	15K			
	P6SS-20	20K			
Other °6-arm PEG °derivatives	Please inquire	10K	Please inquire		
		15K			
		20K			

- 6-arm PEG is of sorbitol core.
- The average number of arms is 5.9 .
- NHS represents N-hydroxy succinimide.

Related / associated products and documents

See [BioSciences Innovations catalogue](#) and [e-search tool](#).

Other PEO reagents: Synthetic PEG products (PEO3 to PEO36)

- Heterobifunctional crosslinkers: NHS-MAL reagents, i.e. [NHS-PEO-MAL AL6581](#) and SMCC [17412A](#)
- Homobifunctional crosslinkers: NHS-NHS reagents, i.e. [NHS-PEO-NHS BH8811](#) and DSS [54940A](#)
- Homobifunctional crosslinkers: MAL-MAL reagents, i.e. [MAL-PEO-MAL L7736A](#) and BMOE [L7730A](#)
- PEO Linkers & modifiers: MAL-COOH [AZ4170](#) and BMPA [43064A](#);
NHS-PEG-COOH [AN1280](#); mPEG-NHS [DZ3531](#) and others (-SH, -OH,...)
- PhotoActivable (PA) crosslinkers: SH and PA reactive i.e. SCBP [#BI1361](#),... • SMCC-hydrazide [#BI1281](#)
- Hydrazone chemistry: [Conjugation kit #BL1501](#) and crosslinkers (HyNic reagents (react with CHO groups)
SANH [#BL9270](#), MHPH [#BL9401](#) SH-reactive)

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