

# Aminoxy & Aldehyde PEO/PEG reagents for Biorthogonal Conjugation and Labeling of sugars by Oxime ligation

## Products Description

PolyEthylOxy (**PEO**, also known as **PEG**: PolyEthylene Glycol) is a nice structure used as an hydrophilic spacer to separate functional groups on biomolecules and supports. It is available in a variety of lengths, providing a flexible spacer, and it is highly hydrophilic. These features are taken to good account to create conjugates of affine probes, fluorescent or enzymatic markers, peptides, supports like polystyrene plates, resins, agaroses... PEO/PEG have found great application to create drug delivery systems, hydro-gels, special coated surfaces, biocaptors, vaccines...

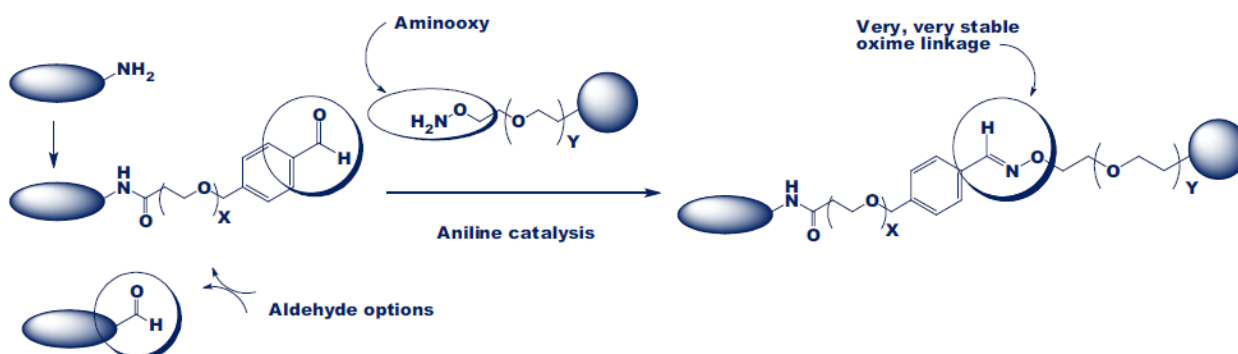
PEO compounds are available in a variety of derivatives. Below are bio-orthogonal conjugations reagents to give extremely stable oxime linkages:

- **Amino-Oxy reagents**, for conjugation with aldehydes and cetones and their partner:
- **4-formyl-benzamido (4-FB) reagents**, for conjugations with AminoOxy (or HyNic groups).

## Amino-Oxy-PEO reagents

The **Aminoxy group (Oxamine)** allows to form, with aldehydes and ketones, extremely stable oxime linkages. Aminoxy-PEO compounds are available with carboxyl, amine, reactive group NHS ester and azide, and the BIOTIN label.

*An extremely stable linkage!*



• **Aminoxy-PEO-azide** is a bi-functional linker, a dual-purpose linker that has numerous potential applications. Acylation of the oxyamine end affords a hydroxamic acid that bears a PEO-linked azide group. Hydroxamic acids have long been known to be useful as carboxylic acid mimics. Thus, an advantage is that it allows the introduction of the PEO-azide functionality while retaining comparable acidity to the original carboxylic acid. Alternatively, it is possible for the oxyamine end to condense with an aldehyde, affording an oxime that bears a PEO-linked azide group. Subsequently, the azide group is available for use in a variety of well-known ligation paradigms.

### Aminoxy-PEO<sub>3</sub>-Azide

Syn.: Aminoxy-TEG-Azide; CAS[-]  
MW: 234.25 – Store at +4°C

### FZ8700, 100mg



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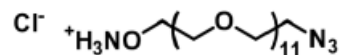
[uptima@interchim.com](http://uptima@interchim.com)  213 Avenue J.F. Kennedy - BP 1140  
03103 Montluçon Cedex - France  
Tél. 04 70 03 88 55 - Fax 04 70 03 82 60

FT-JV2290

**Aminoxy-PEO<sub>11</sub>-Azide**

Syn.: Aminoxy-PEG<sub>11</sub>-Azide HCl; 10538; CAS:-  
MW: 623.13 – Store at +4°C

**BS4Z90, 50mg BS4Z92, 1g**



• **Aminoxy building blocks :**

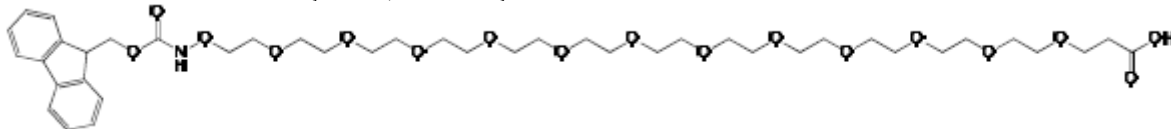
**Fmoc-Aminoxy-PEO<sub>12</sub>-acid**

**JV2290, 100mg**

Incorporate a terminal aminoxy into a peptide with a PEO to directly conjugate to an aldehyde!

MW = 855.96

Syn.: 10849, Fmoc-Aminoxy-dPEG12-COOH



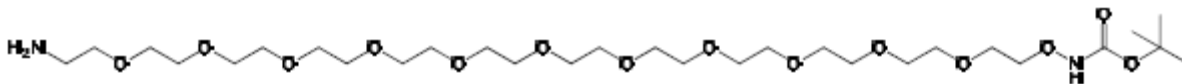
**Amino-PEO<sub>11</sub>-aminoxy-t-boc**

**JV2300, 100mg**

Add an aminoxy moiety with PEO that is carbonyl reactive

MW= 660.79

Syn.: 111112; Amino-PEO<sub>11</sub>-aminoxy-t-boc



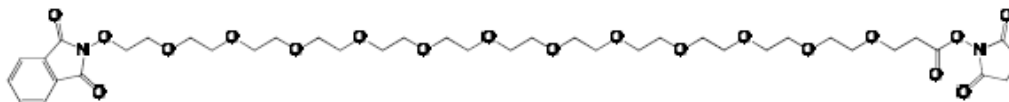
**PhthNO-PEO<sub>12</sub>-NHS ester**

**JV2310, 100mg**

Useful as a conjugation reagent, with biologically relevant CHO's or with the 4-FB-PEOs

MW= 860.90

Syn.: 11135, PhthNO-dPEG12-N-Succinimidyl ester



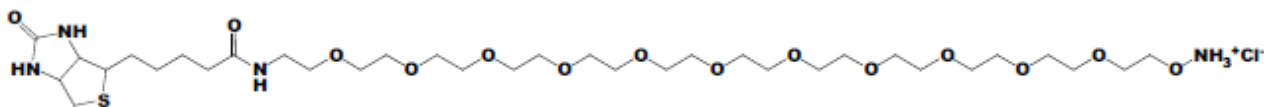
**Biotin-PEO<sub>11</sub>-oxyamine. HCl**

**JV2320, 50mg JV2322, 1g**

A biotinylated Amino-oxy PEO linker for biotin/avidin systems.

MW = 823.43

Syn.: 11102; Biotin-PEO<sub>11</sub>-oxyamine. HCl



**Biotin-PEO<sub>11</sub>-oxyamine. HCl**

**JV2320, 50mg JV2322, 1g**

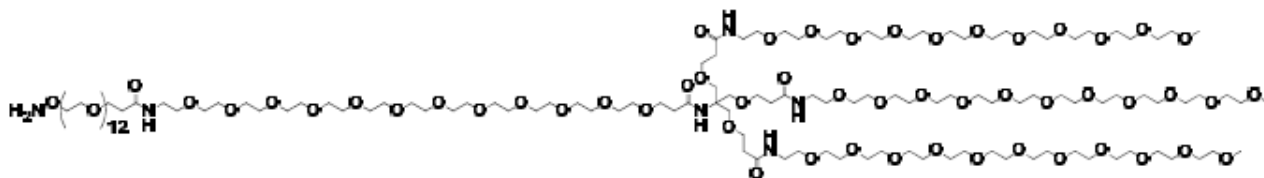
**Aminoxy-PEO<sub>12</sub>-Amido-PEO<sub>12</sub>-(m-PEO<sub>11</sub>)<sub>3</sub>**

**JV2330, 100mg**

A unique branched Amino-Oxy-PEO compounds

MW= 3045.60

Syn.: 10492; Aminoxy-dPEG12-Amido-dPEG12:(Methoxy-dPEG11)<sub>3</sub>



Search [here](#) or ask for other AminoOxy reagents (e.g. with Biotins: [FT-84961A](#))

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213 Avenue J.F. Kennedy - BP 1140  
93103 Montluçon Cedex - France  
Tél. 04 70 03 88 55 - Fax 04 70 03 82 60

### References for Oxime chemistry applications:

\*\* With aniline catalysis:

- Nucleophilic Catalysis of Oxime Ligation, Anouk Dirksen, Tilman M. Hackeng, and Philip E. Dawson; *Angew. Chem. Int. Ed.* 2006, 45, 7581–7584
- Rapid Oxime and Hydrazone Ligations with Aromatic Aldehydes for Biomolecular Labeling; Anouk Dirksen and Philip E. Dawson; *Bioconjugate Chem.* 2008, 19, 2543–2548
- Nucleophilic Catalysis of Hydrazone Formation and Transimination: Implications for Dynamic Covalent Chemistry, Anouk Dirksen, Sjoerd Dirksen, Tilman M. Hackeng, and Philip E. Dawson; *J. Am. Chem. Soc.*, 2006, 128, 15602–15603
- High-efficiency labeling of sialylated glycoproteins on living cells, Ying Zeng, T N C Ramya, Anouk Dirksen, Philip E Dawson, James C Paulson, *Nature Methods*, 2009, 6(3), 207-209.

## Aldehyde reagents with Amine reactivity and PEO spacer

These bifunctional crosslinkers allow to form conjugates by reacting a first functional group toward a target molecule1 then the second functional toward a target molecule2. The conjugation chemistry involves:

**4-formyl-benzamido group (4-FB)** reacts with AminoOxy group to yield a very stable Oxime bond. It also can be used to reacts with HyNic groups (see [hydrazine chemistry reagents](#)). +.

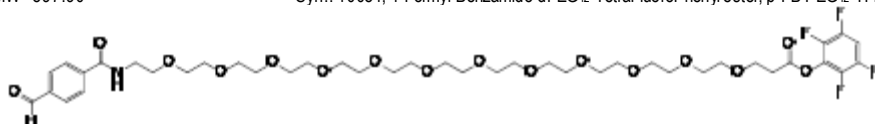
**Tetra-Fluoro-Phenyl group (TFP)** reacts at pH7-9 with primary amines found on lysine residues and the N-terminus and secondary amines such as histidine and tryptophan, to yield a stable amide bond.

### 4-FB-PEO<sub>12</sub>-TFPh ester

### JV2340, 100mg

MW= 897.90

Syn.: 10081; 4-Formyl-Benzamido-dPEG<sub>12</sub>-TetraFluoroPhenyl ester; p-FB-PEG<sub>12</sub>-TFP ester

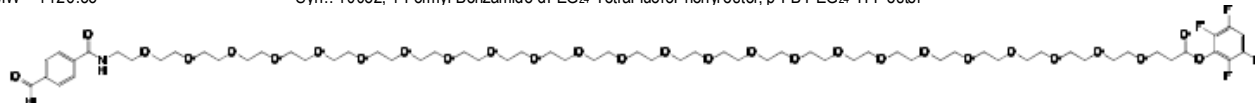


### 4-FB-PEO<sub>24</sub>-TFPh ester

### JV2350, 100mg

MW= 1426.53

Syn.: 10082; 4-Formyl-Benzamido-dPEG<sub>24</sub>-TetraFluoroPhenyl ester; p-FB-PEG<sub>24</sub>-TFP ester



## Other Aldehyde reagents

Search [here](#) or ask for other aldehyde derivatives

## Related products and documents

- **Other AminoOxy reagents:** [CY<sub>aniline</sub> Aminooxy labeling agents \(AWJSC1\)](#)
- **Other PEO reagents:** linkers, crosslinkers such as amine reactive [NHS-PEO-NHS \(BH8811\)](#) and Sulfhydryls reactive [MAL-PEO-MAL \(L7736A\)](#)
- **Hydrazone chemistry reagents:** HyNic #[BL9270](#) (react with CHO groups) and ControlledAmine Conjugation kit #[BL1501](#)
- **Click chemistry reagents:** Alkyne reagents, Azide reagents i.e. See [Click chemistry reagents](#) (Azide-Amine linker ZL5540).
- **Azides derivatives** with a variety of chemical groups (Amino, COOH,...), reactive ones (NHS, Maleimide,...) azides conjugates with labels such as fluorescent dyes, Biotin,. for labeling applications. i.e. See [FluoProbes – Azide reagents](#) , [conventionnal dyes – Azide reagents](#)
- [AminoOxy reagents](#)<sup>[PH]</sup>
- [Advanced biochemistry technologies](#)<sup>[PH]</sup> and much more at the [BioSciences Innovations catalogue](#) and [e-search tool](#).

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## Ordering information

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