

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## Atto 590 Protein Labeling Kit

Fluorescent labeling of thiol groups

### 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Name: Atto 590 Protein Labeling Kit  
Catalog Number: FP-202-590  
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### 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture  
According to Regulation (EC) No. 1272/2008 (EU-GHS/CLP)  
Flam. Liq. 3, H226  
Acute Tox., Inhalation 4, H332  
Acute Tox., Dermal 4, H312  
Skin Corr. 1B, H314  
Eye Irrit. 2, H319  
Repr. 1B, H360D  
According to EC-directives 67/548/EEC or 1999/45/EC  
Xn, R20/21  
C, R34  
Xi, R36  
R61

Label elements

Labelling according Regulation (EC) No 1272/2008 [CLP]



Pictogram

Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour.  
H312 + H332 Harmful in contact with skin or if inhaled  
H314 Causes severe skin burns and eye damage.  
H319 Causes serious eye irritation.  
H360D May damage the unborn child.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
P280 Wear protective gloves/ protective clothing.

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P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P341	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
Supplemental Hazard Statements	none

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazard components of the Kit:

DMF

Synonyms:	N,N-Dimethylformamide
Formula:	C <sub>3</sub> H <sub>7</sub> NO
Molecular Weight:	73.09 g/mol
CAS-No.:	68-12-2
EC number:	200-679-5
Index-No.:	616-001-00-X
Registration number:	01-2119475605-32-XXXX
Classification:	Flam. Liq. 3, H226 - Acute Tox. 4, H312/H332 - Eye Irrit. 2, H319 - Repr. 1B, H360D Xn, R20/21 - Xi, R36 - R61
Concentration:	?100 %

TCEP

Synonyms:	Tris(2-carboxyethyl)phosphine hydrochloride
Formula:	C <sub>9</sub> H <sub>15</sub> O <sub>6</sub> P x HCl
Molecular Weight:	286.65 g/mol
CAS-No.:	51805-45-9
Classification:	Skin Corr. 1 B, H314 C, R34
Concentration:	?100 %

### 4. FIRST AID MEASURES

#### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration.

#### In case of skin contact

Wash off with soap and plenty of water.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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### Most important symptoms and effects, both acute and delayed

drying, cracking of the skin, Skin irritation

## 5. FIRE-FIGHTING MEASURES

### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

Avoid dust formation.

### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Sweep up and shovel. Keep in suitable, closed containers for disposal.

## 7. HANDLING AND STORAGE

### Handling

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

### Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: store at -20 °C

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Personal protective equipment

#### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

For prolonged or repeated contact use protective gloves.

#### Eye protection

Safety glasses

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### Hygiene measures

General industrial hygiene practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form:	DMF: liquid TCEP: solid
Colour:	DMF: colourless TCEP: white

### Safety data

pH:	
Melting point:	-61 °C (DMF)
Boiling point:	153 °C (DMF)
Flash point:	58 °C - closed cup (DMF)
Ignition temperature:	440 °C (DMF)
Lower explosion limit:	2.2 % (v/v) (DMF)
Upper explosion limit:	16 % (v/v) (DMF)
Water solubility:	completely miscible (DMF)

## 10. STABILITY AND REACTIVITY

### Storage stability

Stable under recommended storage conditions.

### Materials to avoid

Strong oxidizing agents

### Hazardous decomposition products

no data available

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

DMF:	
Oral LD <sub>50</sub>	2800 mg/kg (rat) (TOXNET)
Dermal LD <sub>50</sub>	1500 mg/kg (rabbit) (TOXNET)
Inhalativ LC <sub>50</sub> /4 h	90-15 mg/l (rat)

### Irritation and corrosion

DMF:	
Skin - human - Mild skin irritation - 24 h	
Eyes - rabbit - Moderate eye irritation - 24 h	

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### Sensitisation

no data available

### Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification. IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (N,N-Dimethylformamide)

### Germ cell mutagenicity

mouse, lymphocyte, mutation in mammalian somatic cells

### Reproductive toxicity

May cause congenital malformation in the fetus.

## 12. ECOLOGICAL INFORMATION

### Toxicity

DMF:

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 9.000 - 13.000 mg/l - 96 h
	LC50 - Lepomis macrochirus (Bluegill) - 6.700 - 7.500 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 10.400 - 10.800 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 9.800 mg/l - 96 h
	LC50 - Lepomis macrochirus (Bluegill) - 6.300 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 10.600 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 9.600 - 13.100 mg/l - 48 h
	EC50 - Daphnia magna (Water flea) - 15.700 mg/l - 48 h
Toxicity to algae	LC50 - Desmodesmus subspicatus (green algae) - > 500 mg/l - 96 h

### Elimination information (persistence and degradability)

Biodegradability Result: > 90 % - Readily biodegradable

### Further information on ecology

none

## 13. DISPOSAL CONSIDERATIONS

### Product

Observe all federal, state, and local environmental regulations.

### Contaminated packaging

Dispose of as unused product.

## 14. TRANSPORT INFORMATION

### UN number/ Proper shipping name

ADR/RID: UN 2265 N,N-Dimethylformamid

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IMDG: UN 2265 N,N-Dimethylformamide  
IATA: UN 2265 N,N-Dimethylformamide

ADR/RID: UN 3261 Ätzender saurer organischer fester Stoff, n.a.g. (Tris(2-carboxyethyl)phosphine hydrochloride)  
IMDG: UN 3261 Corrosive solid, acidic, organic, n.o.s. (Tris(2-carboxyethyl)phosphine hydrochloride)  
IATA: UN 3261 Corrosive solid, acidic, organic, n.o.s. (Tris(2-carboxyethyl)phosphine hydrochloride)

### Transport hazard class(es)

ADR/RID: 3  
IMDG: 3  
IATA: 3

ADR/RID: 8  
IMDG: 8  
IATA: 8

### Packaging group

ADR/RID: III  
IMDG: III  
IATA: III

ADR/RID: II  
IMDG: II  
IATA: II

### Environmental hazards

ADR/RID: no  
IMDG: no  
IATA: no

ADR/RID: no  
IMDG: no  
IATA: no

## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

## 16. OTHER INFORMATION

### Further information

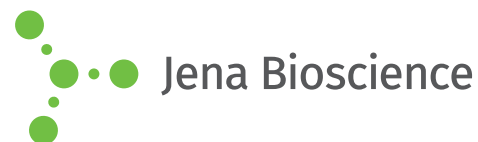
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The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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