



## Product Information Sheet

### C224 Cellulase, Onozuka R-10

Synonym: N/A  
CAS: 9012-54-8  
Formula: N/A  
Molecular Wt: N/A

#### Properties

Form: Powder  
Appearance: Beige to Tan  
Application: Enzyme  
Solubility: Water  
pH: 6.0 to 7.5  
Storage Temp: 2 to 6°C  
Storage Temp of Stock Solution: Stable for 24h at 4°C; completely degraded at 80°C after 10-15 min.  
Other Notes: Derived from *Trichoderma viride*

#### Application Notes

Cellulase Onozuka R-10 is derived from *Trichoderma viride*. It is a multi-enzymatic system consisting of cellulase,  $\alpha$ -amylase, hemicellulase, pectinase, and protease activity. Cellulase acts together with other enzymes to degrade cell walls by modifying celluloses, lichenin, and cereal  $\beta$ -D-glucans. It modifies cellulose by hydrolyzing 1,4- $\beta$ -D-glucosidic linkages. Other enzyme like  $\alpha$ -amylase break down 1,4- $\alpha$ -D-glucosidic linkages in polysaccharides while 1,4- $\alpha$ -D-galactosiduronic linkages in galacturans are randomly cleaved by pectinase.

Cellulase Onozuka R-10 contains high cellulase activity. It is often used in the isolation of plant protoplasts when combined with Macerozyme R-10 (Product No. M481) or other enzymes. It contains 1U/mg of cellulase activity, meaning one unit of cellulase will liberate 1 micro mole of glucose from carboxymethyl cellulose. Cellulase activity is inhibited by glucose and cellobiose. Moreover, it is completely inhibited by  $\text{Hg}^{2+}$  and slightly inhibited by  $\text{Mn}^{+}$ ,  $\text{Ag}^{2+}$ ,  $\text{Zn}^{2+}$  and  $\text{Cu}^{2+}$ . Cellulase Onozuka R-10 also contains approximately 1 U/mg of hemicellulase activity, 0.80 U/mg of  $\alpha$ -amylase activity, 0.4 U/mg of pectinase activity, and 0.01 U/mg of protease activity.

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