



Application Data Sheet



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RAPIDASE[®] FIBER

Fruit and Vegetable Processing / Enzymatic Filter Cleaning

BENEFITS

- Improves the yield, quality, and clarification.
- Developed to process juice with high colloids content.
- Improves juice and color extraction.
- Can be used on clear concentrates and purees.
- Maintains and recovers filter membrane performance
- Improves filtration rate.

PRODUCT DESCRIPTION

RAPIDASE[®] FIBER is a liquid pectinase enriched in arabinolytic activities from *Aspergillus niger* and cellulolytic activities from *Trichoderma longibrachiatum*.

FUNCTION

RAPIDASE[®] FIBER has been developed especially to process juices and to act as a sustainable method to maintain filtration membranes. It contains the right balance of specific pectinase activities, endo exo-arabanases, and other hemicellulase and cellulase activities.

Fruit and Vegetable

- These enzymes, used in advanced extraction processes including a hot break stage, increase extraction and simultaneously decrease the viscosity of the pulp, reduce juice colloid content allowing an easy separation of a first juice from solids with decanters and presses while facilitating downstream processing.
- Tropical and stone fruits, may be processed to purees. Purees can then later be re-processed to clear juices.
- When used on vegetables, RAPIDASE[®] FIBER leads to pectin and cell wall structure solubilisation decreasing mash viscosity and improving juice and color extraction. This unique blend of enzymes can improve the yield, quality, and clarification of various fruit and vegetable juices

Filtration

- Enzymatic cleaning frequency depends on the raw material (fruit ripening stage for apple and pears) and process used. We recommend applying at least one enzymatic CIP every week particularly at the end of the season or processing storage fruits or during the hot break.

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APPLICATION AND RECOMMENDED DOSE RATES FOR FRUIT AND VEGETABLES

RAPIDASE® FIBER is easy to use. It can be used with continuous centrifugal extraction equipment as well as with a traditional press system. It must be added continuously during crushing with a metering pump. Just before use, to ensure adequate mixing, it should be diluted in 10 to 20 times its volume of water.

Application	Dosage	Recommendation
Pear advanced extraction	150-375 g/ton	2-3 hours at 50-55°C (122-131°F)
Carrot cloudy juice extraction	300-450 g/ton	1-2 hours at 50-55°C (122-131°F)
Carrot clear concentrate	375-750 g/ton	
Other vegetable as celery, asparagus, onion and garlic	150-375 g/ton	
Olive paste	150 g/ton	45-60 minutes at 30-35°C (86-95°F)
Pineapple Mill Juice	6.0 - 11 g/hl	1 hour at 25-50°C
Puree	50-100 g/ton	1 to 2 hours at 50°C (122°F)
Clear juice	150-200 g/ton	2 hours at 50°C (122°F)
Puree clarification	200 g/ton	2 to 3 days at 4°C (39°F)

APPLICATION AND RECOMMENDED DOSE RATES FOR FILTRATION

For optimal efficiency RAPIDASE® FIBER is used after the first washing with clear water and before the chemical cleaning of UF membranes.

A water solution is prepared with the pH adjusted at 4.0-5.0 with citric acid. RAPIDASE® FIBER is added at 1 to 3 kg per cubic meter of water solution in cleaning tank used for filter cleaning. Enzymatic cleaning sequence is organized preferably as follow:

- Pump enzymatic solution through the membranes and re-circulate in the whole UF membrane unit for 5-10 min.
- Let the enzyme react on the membranes for 45-60 minutes.
- Push out bulking components with water first time.
- Repeat 2-3 times this operation to breakdown and push out fouling colloids and flush out particles.

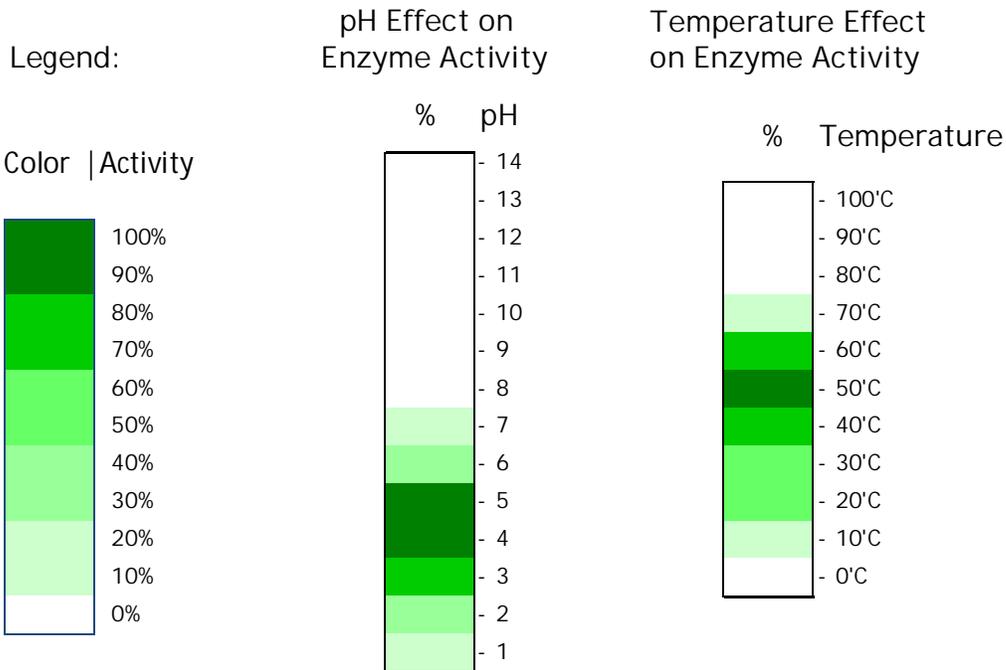
For extreme cases, ultra-filtration membranes can be removed from the ultra-filter and treated separately in soaking solution. (See table here under)

RAPIDASE® FIBER dosage: 1 to 3 kg per cubic meter of acidified water in cleaning tank for filter membrane cleaning.

Application	Dosage	Recommendation
Membrane Cleaning CIP	1-3 kg/m ³ acidified water pH 4.0-4.5	1-2 hours temperature < 50°C (122°F)
Membrane Soaking	1-3 kg/m ³ acidified water pH 4.0-4.5	Overnight ambient temperature

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TECHNICAL SERVICE

This product was developed by our dedicated team of experts. We can help you maximize the efficiency of your process by utilizing our extensive biochemical knowledge and many years of enzyme experience. Please contact your local DSM Food Specialties technical sales representative to receive additional information on meeting your needs.

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