

TYLOPUR[®]

Best Bite in your Plant-Based Food



ShinEtsu



TYLOPUR®

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TYLOPUR® provides excellent bite, texture and binding to your plant-based food. Therefore, it is the optimal product to create the desired meat-like texture in your heated vegan foods without the need for egg or animal protein.



Your Benefit:

Best Bite

TYLOPUR® enables the desired strong and chewy bite to your plant-based products.

Meat-like Texture

TYLOPUR® creates a texture like meat when heated.



Our Product:

Methylcellulose

Unique food ingredient that gels during heating.

Made from Plants

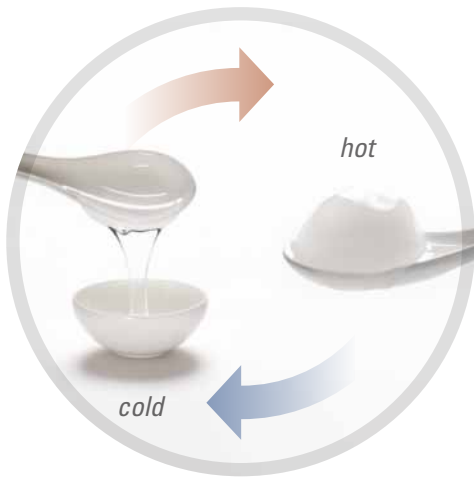
Main source of TYLOPUR® is wood.

Made in Germany

TYLOPUR® is produced in Wiesbaden, Germany

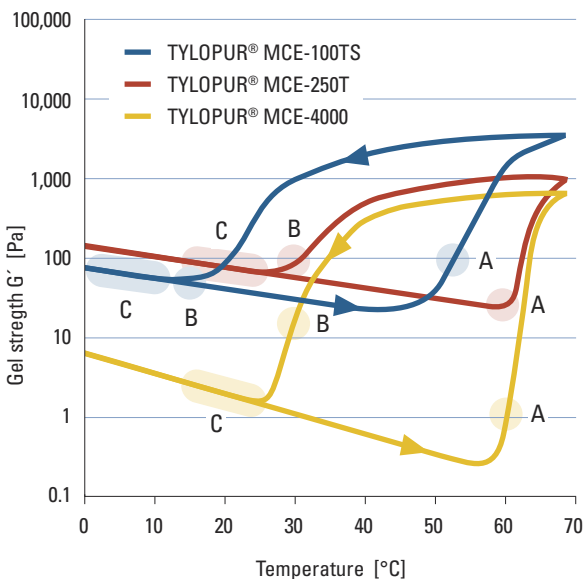
#BestBite with TYLOPUR®

Functionality of TYLOPUR®



TYLOPUR® has the unique property of increasing viscosity during heating. This thermal gelation causes the strong bite of plant-based products containing TYLOPUR®.

Thermal Gelation



The figure shows the thermal gelation of three different grades of TYLOPUR®:

- TYLOPUR® MCE-100TS
- TYLOPUR® MCE-250T
- TYLOPUR® MCE-4000

When a 1,5 % solution is heated, the viscous solution starts to gel above the gelation temperature (A). During cooling, the viscosity drops again. The gel disappears and reaches the original value (B). It is necessary to cool food that contains TYLOPUR® below the hydration temperature (C) during processing to guarantee optimal functionality. The thermal gelation depends on the recipe and the concentration of TYLOPUR®.

	TYLOPUR® MCE-100TS	TYLOPUR® 250T	TYLOPUR® MCE-4000
Benefit of grade	Strongest bite	Good bite and easy handling	Most flexible
Gelation temperature (A)	55 °C	60 °C	60 °C
Disappearance of gel after heating (B)	15 °C	30 °C	30 °C
Hydration temperature (C)	0 – 15 °C	15 – 25 °C	15 – 25 °C
Properties	Very firm gel*	Firmer gel	Firm gel
Cold viscosity (2 % solution, 20 °C)	110000 mPas	250000 mPas	4000 mPas

* cooling of food below 5 °C required for maximum gel strength

Right Preparation for the Best Bite

Right Mixing



Blend TYLOPUR® with other dry ingredients or oil before adding water.

Bite is improved by emulsifying and by applying vacuum thereby.

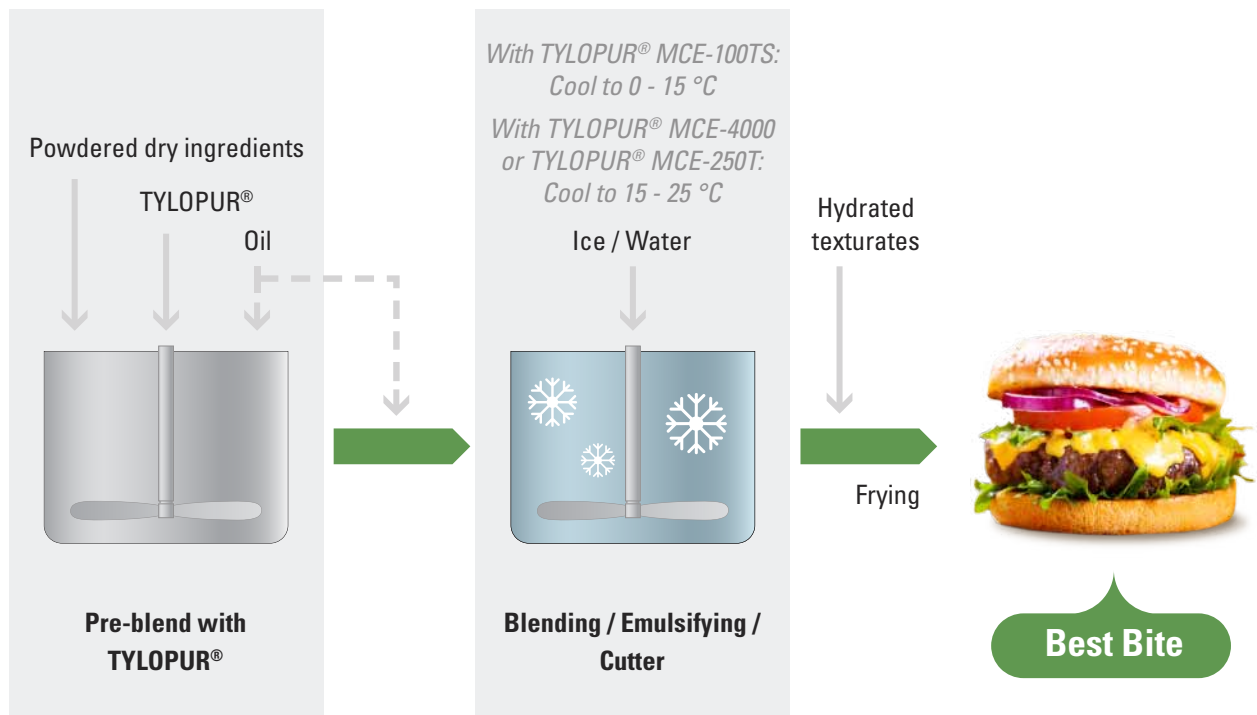
Right Cooling



TYLOPUR® MCE-100TS: Decent bite if cooled below 15 °C, best bite if cooled below 5 °C during preparation.

Use TYLOPUR® MCE-4000 or TYLOPUR® MCE-250T if preparation temperature is above 15 °C.

TYLOPUR® requires the right preparation and cooling temperature to achieve its full potential. For example, an optimal bite in vegetarian burgers is achieved when a pre-blended TYLOPUR® MCE-100TS is emulsified at high shear at temperatures below 5 °C.








Benefits of plant-based burgers	TYLOPUR® MCE-250T 2 %	TYLOPUR® MCE-100TS 2 %	TYLOPUR® MCE-4000 2 %	TYLOPUR® MCE-4000 higher dosage 2,3 %
No dough stickiness	++	++	+	+
Preparation at room temperature	++	-	++	++
Best bite	++	+++	+	++

Plant-based burgers were prepared using the recipe on page 6 and different grades of TYLOPUR®.

Plant-Based Fried Sausages






-  Hydrate textured wheat with twice the amount of water for 30 min.
-  Blend all dry ingredients with oil.
-  Add onions and the remaining water (< 5 °C) and emulsify all ingredients at high shear (if possible with vacuum) below 5 °C.
-  Mix the emulsion and the hydrated texturates.
-  Fill sausages and fry them at medium temperature.

Ingredients	Dosage [%]
Water	58.7
Canola oil	13
Textured wheat	10
Onions	6
Pea protein isolate	5
Potato starch	3
Spices style „Nürnberger“	2.5
TYLOPUR® MCE-100TS	1.8
	<i>Total 100</i>

Plant-Based Burger







-  Emulsify TYLOPUR® with all of the oil and 40 % of the water in a vacuum cutter.
-  Hydrate the textured wheat with the rest of water.
-  Mix all ingredients together, form and fry.

Ingredients	Dosage [%]
Water	66
Textured wheat	19
Oil	10
TYLOPUR® MCE-250T	2
Flavor & color	1.7
Salt	0.6
Potato starch	0.7
	<i>Total 100</i>

Plant-Based Sausages Type „Wiener“








-  Blend all dry ingredients except for the egg white powder with oil.
-  Add onions and water (if possible < 5 °C) and emulsify all ingredients below 20 °C.
-  Add egg white powder and emulsify well.
-  Fill sausages. Heat them to an inner temperature above 70 °C in hot but not boiling water.

Ingredients	Dosage [%]
Water	56
Canola oil	18
Soy protein isolate	8
Egg white powder	5
Natural flavors	4.5
Onions	4
Carrageenan	2
TYLOPUR® MCE-4000	1.5
Salt	1
<i>Total 100</i>	

Plant-Based Nuggets



-  Hydrate textured wheat with twice the amount of water for 30 min.
-  Mix all dry ingredients with oil.
-  Add ice-cold water and blend until a firm emulsion is created at temperatures below 5 °C.
-  Mix, batter and fry the nuggets at 170 °C for 2-3 min.
-  Freeze afterwards or consume directly.

Ingredients	Dosage [%]
Water	67
Textured wheat	16
Canola oil	5
Potato starch	4
Pea protein isolate	2
TYLOPUR® MCE-100TS	2
Natural flavors	2
Salt	1
Psyllium	1
<i>Total 100</i>	

Product Information for TYLOPUR® MCE-100TS, MCE-4000 and 250T

Description:	White to slightly off-white powder
Methoxyl content:	27.5 – 31.5 %
Loss on drying:	Max. 5.0 %
Sulphated ash:	Max. 1.5 %
pH value:	5.0 – 8.0
Viscosity:	TYLOPUR® MCE-100TS: 82500 – 154000 mPas TYLOPUR® MCE-4000: 3000 – 5600 mPas TYLOPUR® 250T: 187500 – 350000 mPas
Compliance:	Accepted food additives by EU and FDA, GRAS status, comply with FCC, GMO free, allergen free
Certificates:	FSSC 22000, ISO 9001, ISO 14001, kosher, halal
Declaration:	Methylcellulose or E461 according to EU regulation, made in Germany
Microbiology:	Total aerobic microbial count: ≤ 100 CFU, total yeast/moulds count: ≤ 100 CFU
Nutritional:	Protein, total fat, sugars: 0 g; carbohydrate: 93.5 g; ash content: 1.5 g; NaCl: 1.2 g; Na: 0.5 g; energy: 187 kcal per 100 g
Package:	20 kg PE bag, 540 kg per plastic pallet 1200 x 800

Shin-Etsu group is one of the world's leading manufacturer of cellulose ethers. We are committed to high-quality standards and continuous quality improvement. Our plants for producing cellulose ethers are located in Germany and Japan, both of which are accredited by ISO:9001 and ISO:14001.

Shin-Etsu produces various types of cellulose ethers for food applications. Along with TYLOPUR® MCE-100TS, TYLOPUR® MCE-4000 and TYLOPUR® MCE-250T, other grades of methylcellulose and hydroxypropyl methylcellulose are marketed under the brand name TYLOPUR® and METOLOSE®. TYLOPUR® and METOLOSE® are used as food additives to stabilize not only plant-based food but also gluten-free products, restructured meat, fillings, and croquettes.



YouTube channel: www.youtube.com/channel/UCtINthGAxyR8NW1FhHcqzWw



www.setylose.com: www.setylose.com/en/applications/food/food-ingredients



LinkedIn: www.linkedin.com/company/setylose-pharma-food

For further information or samples, contact our local distribution partner or Shin-Etsu.

ShinEtsu

FOOD 

SE Tylose GmbH & Co. KG

Kasteler Str. 45, 65203 Wiesbaden, Germany

www.setylose.com contact@setylose.com