

Distiller's Guide

MALTS DEDICATED TO THE AMBER SPIRIT



Muntons
PASSIONATE ABOUT MALT SINCE 1921



Hello

Muntons have been a leading global supplier of premium ingredients to the world's distilleries since 1921.

Our fantastic range of grain malts is produced using high quality, sustainably sourced distilling barley. Specifically grown in the UK to have zero glycosidic nitrile (GN), excellent malting properties and high enzyme levels, the varieties selected are ideal for distillers looking for high extract and spirit yields.

In addition to our renowned grain malts, Muntons also supply liquid and dried malt extracts which can be used as a source of fermentable sugars for distilling.

Sustainability lies at the heart of Muntons. We have always been driven to not only lead the industry with sustainable malting methods and reduce carbon footprint, but to the manufacturing of 100% sustainable malt. This has been our ethos for many years, and we will continue to ensure that our industry is safeguarded for future generations.

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- L Muntons Malted Ingredients Inc**
305 Randy Rd, Unit 7-8,
Carol Stream, IL 60188
- M Muntons Bulk Malt Storage**
Couture Trucking Inc.
4185 Vt Rte 101
Troy, VT 05868
- N Muntons East Coast Warehouse**
A. Duie Pyle, Inc.
211 Servistar Industrial Way
Westfield, MA 01085

For more information visit our website www.muntons.com

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1948

Moved to Stowmarket

Muntons took over the 45 acre site, constructed originally for the British Nylon Spinners company, who vacated shortly after the war.

1976

Cedars Maltings built at Stowmarket

This new maltings picked its name from the cedar trees prevalent in the area, which also provided the name for the site address at that time, Cedars Factory.

2015

Anaerobic Digester completed at Stowmarket

A project which underlines our commitment to sustainability, our AD plant not only reduces waste and greenhouse gas emissions but contributes towards our demand for electricity.

2020

Malt extract capacity increased at Stowmarket

Evaporator three will mean that we are able to meet the growing demand for malt extract from our customers around the world.

Refurbishment of germination boxes

Updating and refurbishing the boxes will ensure many more years of service from the maltings at Stowmarket.



1921

Muntons Incorporated

Originally named Munton and Baker (Bedford) Ltd, derived from the name of the company creator: Munton Baker-Munton.

1964

Expanded to Bridlington

Construction of new maltings completed in the midst of the fine Yorkshire malting barley growing region, to supply northern breweries and the Scottish whisky distilling trade.

2007

Singapore office opened

Providing us with a locally based sales presence to simplify communication with our Asian customers and dramatically increase local awareness of our company and its products.

2009

US company formed

With significant trade in US homebrew and craft brewing, opening a US based company helped improve communication and access to this expansive market.

2019

Peating plant built near Bridlington

Located close enough to complete the malting process and introduce naturally phenolic peat flavors, the Tithe Top peating plant will help serve the growing needs of the scotch whisky industry.

2021

Energy centre at Stowmarket

The centre will provide most of the steam heat and electricity for our Stowmarket site.

100 Years & Counting

Celebrating our centenary year with strong heritage leading into the future with significant investment.

Why distil with Muntons?

Muntons brewing and distilling grains are made from the finest malting barley, grown in the UK, in areas recognised as the best barley growing regions in the world. Muntons malts are readily available in both whole and crushed, packed in 25kg/55LBS sacks, one tonne IBC's (intermediate bulk containers) and in bulk. With a long-standing association with malt-based distilling, Muntons has a wealth of experience and understanding of delivering the very best quality and service. 100% sustainable malt, customer service and unparalleled technical support ensure that Muntons customers can make the very best products on the market today.

Quality

It is no coincidence that both Stowmarket and Bridlington maltings are in prime malting barley growing areas. Using the finest quality, locally grown raw material ensures that the products you buy from us are of the highest standard. The barley stored in each of our silos can be traced back to the farms and even the fields where it was grown. We have long-term partnerships with grain merchants and farmers, some of whom have grown barley for us every year for 30 years or more.

For more information on quality visit
<https://www.muntons.com/compliance/>



Trust

Having trust core to our culture is reflected in the partnerships we have with grain merchants and farmers, many over multiple decades. It is testament to the longstanding relationships we have with distillers all over the world, who trust both the service we provide and the ingredients to deliver.

Expertise

Behind great malt, you'll find great people. At Muntons we have always understood the importance of our people in delivering the best possible products and service for our customers.

Our production team constantly seek to be the best they possibly can, with many achieving industry recognised qualifications such as general certificates, malting diplomas and the highly coveted Master Maltster!

This reflects the dedication and commitment our people have and allows us to offer expert technical support to you.

Passion

With 100 years' experience in crafting the highest quality ingredients, this isn't just malt. This is barley that has been grown to the highest specification specifically for us and a process that is allowed to take its time to bring out the very best in flavor and results. It is also a belief in making responsible choices for a sustainable future and a passion that our teams live, breath and share with pride through all that we do.



Sustainable distilling starts with Muntons

At Muntons, we are passionate about environmental protection and are proud to be leaders in making responsible choices for a sustainable future.

Muntons supply ultra-low carbon malt and can prove it. With extensive data Muntons can help you map your carbon impact for raw materials and tell your sustainability story.

At Muntons we are:

- ◆ Proudly manufacturing malt from 100% sustainable barley.
- ◆ Charting an ambitious plan to be carbon neutral ahead of 2050.
- ◆ The first maltster to set a science-based target to reduce Green House Gas emissions by 45% from 2010 to 2025.
- ◆ Thinking full circle. We convert our waste into products that are reusable within our supply chain.
- ◆ Motivated to look across our whole supply chain – from farm to finished ingredient.
- ◆ The first to establish grain carbon calculators – if you want data on carbon footprinting in the malting supply chain, we can guarantee an answer you can trust.



If you would like help with your sustainability story/credentials, then reach out to us sales@muntons-inc.com

Selecting peat worthy of the Muntons name

Our leading role in promoting sustainability means that selecting the right supplier of peat was of great importance. We source our peat from a sustainable supplier based in Scotland which supports our claim that we make 100% sustainable malt. This is verifiable via benchmarking against the internationally recognised Farm Sustainability Assessment underwritten and designed by the Sustainable Agriculture Initiative Platform (SAI).

Muntons Peating Plant

The construction of Muntons peating plant based in the heart of the Yorkshire Wolds was completed in September 2019. The plant is ideally located in a rural setting close to Muntons Flamborough maltings, Bridlington, which produces over 100,000 tonnes of malt a year. Green malt from Bridlington maltings is sent for final kilning at the peating plant where smoke and phenolic characters are introduced to the malt before being supplied to distilling businesses globally.

The plant produces up to 12,000 tonnes of peated malt per annum, predominantly supplied in three strengths, heavily peated, medium peated and lightly peated. Customers can purchase whole or crushed peated malt, in 25kg sacks, tote and bulk. The authentic flavor of peated malt is produced and blended using peat sourced from Scotland. This significant investment is part of Muntons long term programme to expand capacity to meet demands from our existing and growing customer base.



- Automatic sampling – automated sampling, combined with our kiln unload method, ensures analysis is truly representative of the batch as a whole.
- Five dedicated analysis silos – allows us to hold up to five batches off-kiln for analysis. up to four off kiln batches can be blended into one holding silo.
- Automated Friedrich flow controller slides – allowing us to blend any number of silos to accurately meet our analysis requirements.
- Peat source – we can use peat from any source, meaning we can consistently blend to specification.
- Peat furnace design – this is capable of being controlled and optimised using our scada system, improving consistency of product.

- Established malt source – with base malt and blended malt coming from our Bridlington maltings we have a renowned quality base malt, familiar to our customers.
- Kiln technology – the new peating kiln is state of the art including wedge wire flooring, airflow, temperature control, hygiene, efficiency as well as process reporting.
- Kiln unloading – stepped wedge unloading eliminates variations between the top and bottom strata, critical with peating as there is variation in phenol between the top and bottom of the bed. this process ensures all strata of the bed are blended.

Peated Malt Sensory Analysis

To help you evaluate your peated malt samples and to experience their true smoky flavor and aromas, please follow our sensory analysis guide:

- 1 Take 50gms of the malt and place in a 200ml beaker.
- 2 Boil the kettle and top up the beaker with hot water.
- 3 Stir the malt for approximately three turns.
- 4 Allow the malt to settle for three minutes.
- 5 Smell the aroma.
- 6 Look at the clarity of the liquid as it should become cloudy due to the peatiness.
- 7 Allow the solution to cool and take a sip of the liquid.
- 8 From this, the flavors and aroma should be noted, repeat for the other samples.

Flavors to look out for:

- Smoky notes
- Freshness
- Saltiness
- Antiseptic
- Sweetness
- Bitterness



Innovation

We have regular cross-functional innovation sessions in which we review the landscape of the brewing and malting industry. Supported by in-depth market research, the outcome of these sessions is new and innovative product ideas and technologies that are then reviewed and tested by industry experts within Muntons.

In addition to new products we are always looking to improve our own processes to drive sustainability, whether it be a more efficient cooling system for our kilns or new methodology in the extract filters.

We openly share knowledge gained through our market and industry research with our partners/customers to assist in new product development and product reviews. Our goal is to continuously generate new and exciting innovations that will empower our partners to deliver enjoyment to people's lives by creating more of what they love.

Centre for Excellence

Working together

We understand the needs of the market and that products must meet the demands of today's consumer.

Our technical team are always on hand to assist from recipe development, small scale trials to technical support and process improvements.

Something technical? Ask Rob



Robert Urquhart

New Product Development Brewing Technologist

✉ robert.urquhart@muntons.com

Rob joined Muntons as New Product Development Brewing Technologist in 2022. He studied Brewing & Distilling BSc (Hons) at Heriot-Watt University in Edinburgh, graduating with a 1st Class degree with Honours. Rob then specialised in the craft brewing industry, working as Production Brewer at Siren Craft Brew. As part of his role at Muntons, Rob has been involved with the development of new malts and malt extracts as well as recipes, trial brewing and sensory evaluation for customers of all sizes.

Malt Flavors

Characteristics by malt type

Cereal	Wheat, Ale	Caramel	Crystal up to color 110 EBC, Caramalt
Sweet	Ale, Amber, Munich	Coffee	Chocolate, Black
Burnt	Black, Roasted Barley or Malt	Chocolate	Very dark Crystal
Nutty	Caramalt, Ale	Treacle	Crystal over 240 EBC Color
Green	Lager, High Enzyme, Diastatic	Smoky	Smoked/Peated
Sulphury	DMS, lager, Sulphitic and Sulphidic	Phenolic	Peated
Solvent	Should not be present in any malt type	Fruity	Crystal color up to 110 EBC, Munich
Toffee	Crystal up to color 240 EBC	Bitter	Chocolate, Black

Flavor wheel

Currently malt tasting is not part of any malt specification but offers possibilities to differentiate both positive and negative flavors. Conventional malt analysis may suggest that malts are identical, yet the processing parameters used could have been different and therefore the flavor profile also slightly different (Davies, 2010).

It is important to have a sufficiently discriminatory method to flavor profile malts that reflects the range of malt flavors available. Some customers require tasting of worts for the correct flavor profile. This doesn't reflect contribution of the husk and the sweetness of worts predominates, making full profiling impractical.

A method that fully describes the profile of malt has been developed that creates a 'porridge' by grinding the whole malt and mixing with a small amount of water. This avoids the problems for the taster of drying out the palate if tasting whole malt or dry ground samples.

When given free rein to describe malt flavors, tasters tend to use food products as descriptors. It has proved possible to group these into a smaller number of sensory terms to create a unique profile for the entire range of malts (Murray et al, 1999). This malt flavor wheel allows distinct profiles to be created for the wide range of malts and malted ingredients we produce.



Our Products

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Distilling Ingredients from Muntons
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RYE FLAKES
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LIGHTLY PEATED MALT
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MEDIUM PEATED MALT
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HEAVILY PEATED MALT
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CHOCOLATE MALT
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CRYSTAL MALT
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CARA MALT
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WHEAT FLAKES
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ROAST MALT EXTRACT
Distilling Ingredients from Muntons
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Available pack sizes

 Bulk (Truck)	 1 Tonne Tote Bag
 25kg Sack	 25kg Jerry Can (Extracts)

Pot Still Malt & Organic Pot Still Malt

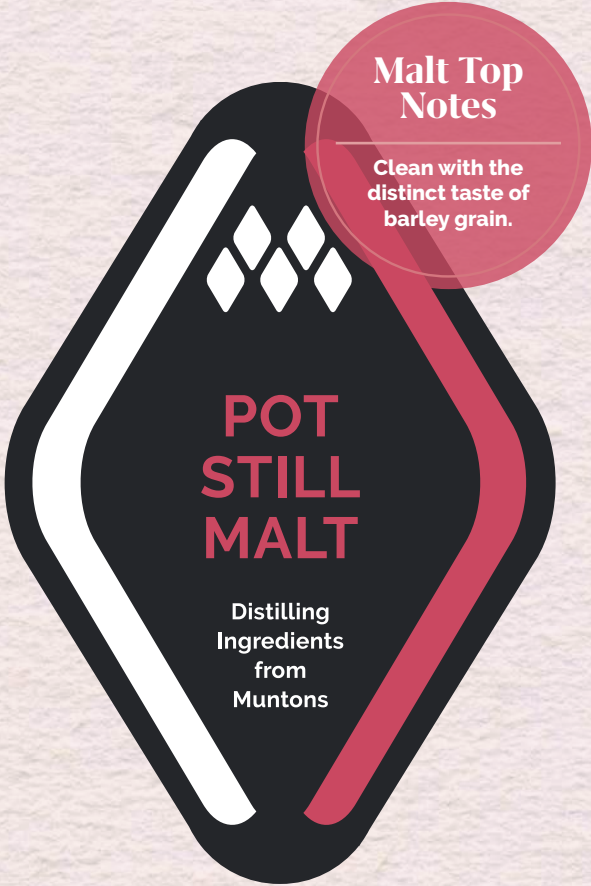
At Muntons we source specific varieties of malting barley for use as Pot Still Malt. All distilling varieties sourced are nil GN and are fully analyzed at intake to ensure that only the highest quality barley is sent for malting. Barley varieties sourced for distilling must meet full industry specifications to ensure that the finished malt has the highest extract and fermentability levels possible.

Malt Specifications

- Ingredient declaration:** Malted Barley
- Allergen Information:** Contains Gluten
- Topnotes expected in spirit:** Clean, Grainy

Typical Analysis:

Parameter	Unit	Pot Still Malt
Attenuation	%	>87
OG		-
FG		-
Moisture	%	< 5
Fermentability	%	>87
PSY	LAT	>405
Soluble Extract asis	%	>76.5
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	>76.5



Rye Flakes

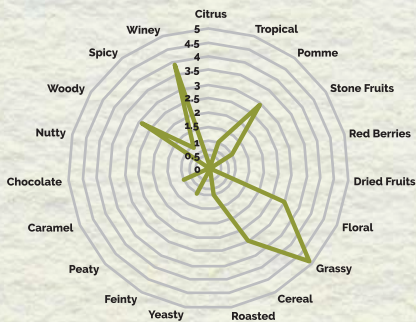
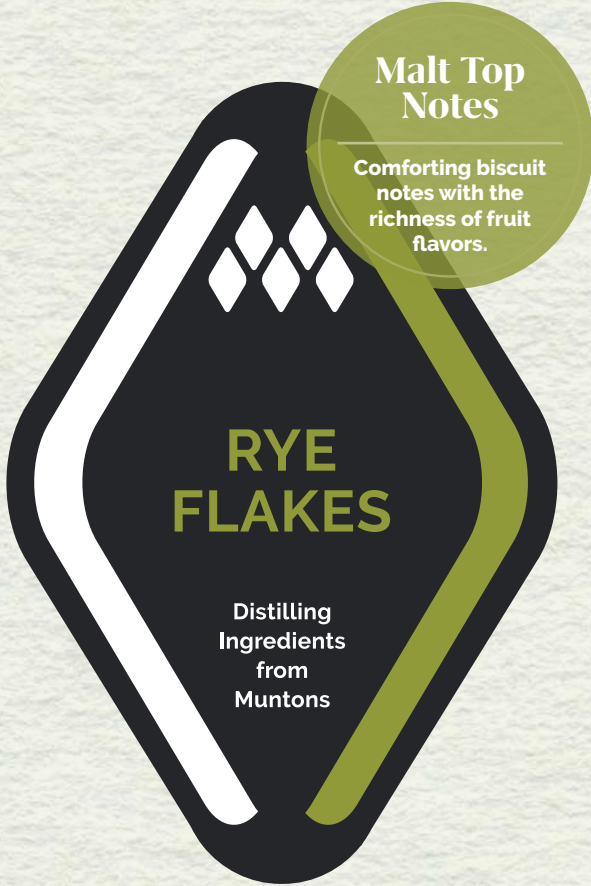
Muntons malted rye flakes are a specialist rye malt product made in Muntons drum maltings. After kilning, the malt is sent to our micronising plant where it is toasted and flaked. This additional process adds a significant amount of flavor and aroma to the malted rye flakes. The resulting new make spirit has added hints of fresh fruit, green grasss and fresh green wood. to ensure that the finished malt has the highest extract and fermentability levels possible.

Malt Specifications

- Ingredient declaration:** Malted Rye
- Allergen Information:** Contains Gluten
- Topnotes expected in spirit:** Biscuit, Fruit

Typical Analysis:

Parameter	Unit	Rye Flakes
Attenuation	%	89
OG		8.1
FG		0.9
Moisture	%	<9.5
Fermentability	%	>65
PSY	LAT	210
Soluble Extract asis	%	52
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	67



Lightly Peated Malt

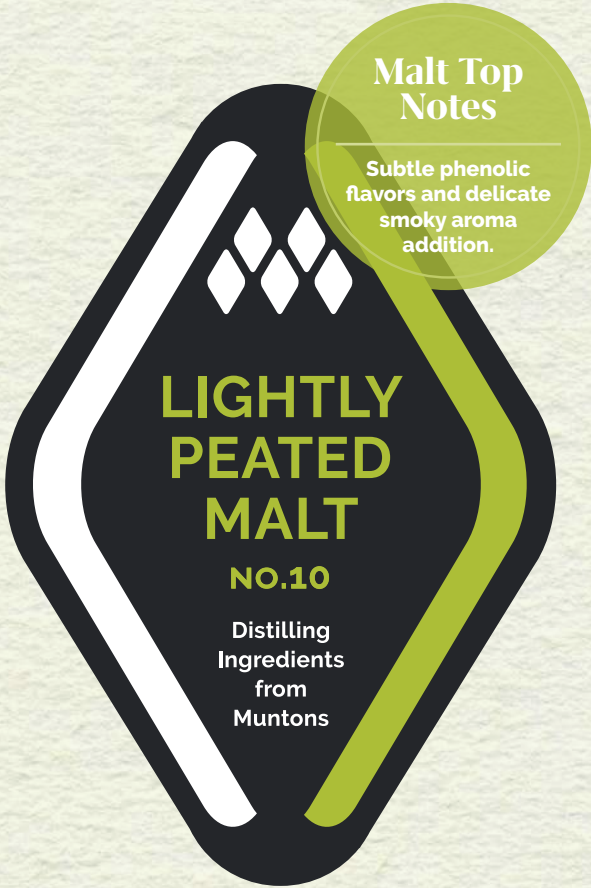
Muntons Peated Malts are made in our state of the art peating production facility in Yorkshire. The peating plant is supplied with fresh green pot still malt from our maltings in Bridlington. The Malt is then kilned while being infused with peatsmoke. The resulting malt has strong phenolic aromas of sweet peat smoke. Peated malt imparts a smokey/peaty aroma to the new make spirit.

Malt Specifications

Ingredient declaration:	Malted Barley
Allergen Information:	Contains Gluten
Topnotes expected in spirit:	Phenolic, Smoky, Peaty

Typical Analysis:

Parameter	Unit	Lightly Peated Malt
Attenuation	%	>85.5
OG		-
FG		-
Moisture	%	<4.5
Fermentability	%	>85.5
PSY	LAT	>390
Soluble Extract asis	%	>77
Phenol	ppm	10
DP IOB		-
Grist sol ex	%	>77



Medium Peated Malt

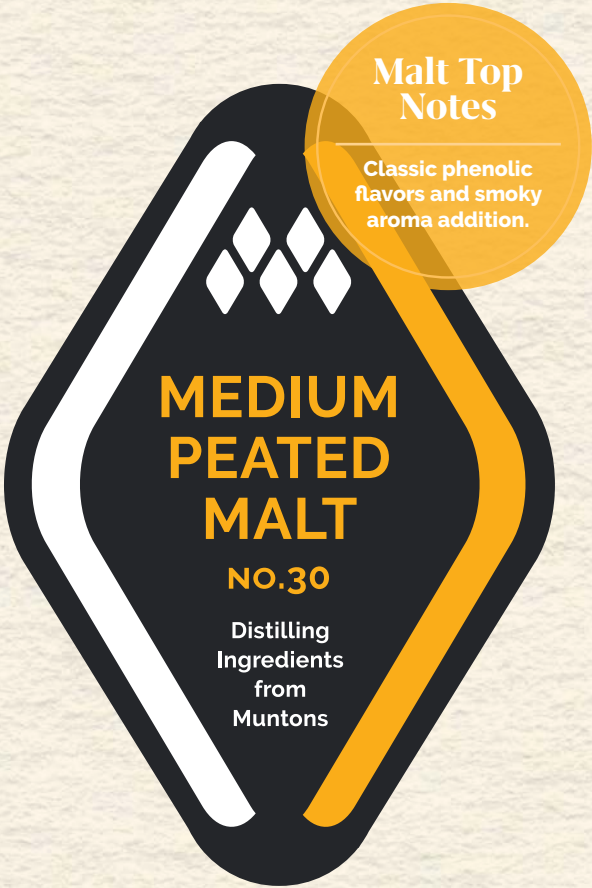
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Malt Specifications

Ingredient declaration:	Malted Barley
Allergen Information:	Contains Gluten
Topnotes expected in spirit:	Phenolic, Smoky, Peaty

Typical Analysis:

Parameter	Unit	Medium Peated Malt
Attenuation	%	>85.5
OG		-
FG		-
Moisture	%	<4.5
Fermentability	%	>85.5
PSY	LAT	>390
Soluble Extract asis	%	>77
Phenol	ppm	30
DP IOB		-
Grist sol ex	%	>77



Heavily Peated Malt

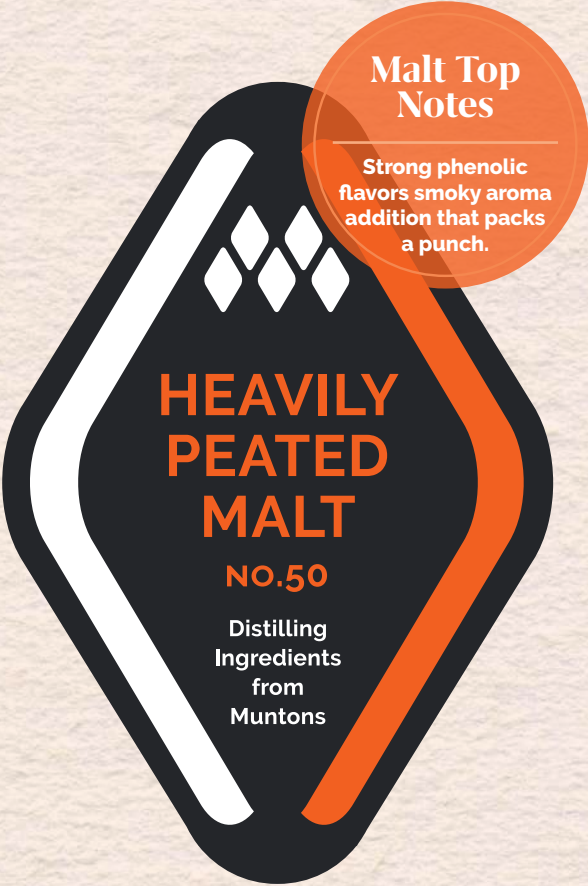
Muntons Peated Malts are made in our state of the art peating production facility in Yorkshire. The peating plant is supplied with fresh green pot still malt from our maltings in Bridlington. The Malt is then kilned while being infused with peatsmoke. The resulting malt has strong phenolic aromas of sweet peat smoke. Peated malt imparts a smokey/peaty aroma to the new make spirit.

Malt Specifications

Ingredient declaration:	Malted Barley
Allergen Information:	Contains Gluten
Topnotes expeted in spirit:	Phenolic, Smoky, Peaty

Typical Analysis:

Parameter	Unit	Heavy Peated Malt
Attenuation	%	>85.5
OG		-
FG		-
Moisture	%	<4.5
Fermentabillity	%	>85.5
PSY	LAT	>390
Soluble Extract asis	%	>77
Phenol	ppm	50
DP IOB		-
Grist sol ex	%	>77



Chocolate Malt

Chocolate malt is a go to roasted malt for color and flavor additions. Often used in porters, mild and some bitter recipes. They have a distinct roasted and coffee-like aroma with a mild bitter taste.

Malt Specifications

Ingredient declaration:	Malted Barley
Allergen Information:	Contains Gluten
Topnotes expeted in spirit:	Rich and redolent of dark chocolate, arabica coffee, hazelnut and caramel notes



Crystal Malt 400

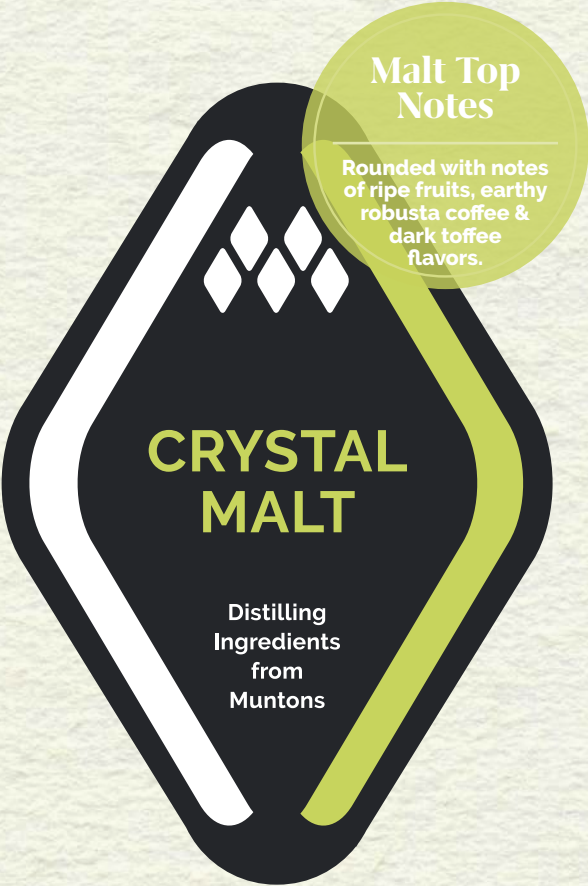
Crystal Malt 400 is the highest color crystal malt in Muntons range. The malt has been crystalized in a roaster which adds darker sugars to the malt. These sugars create a vast base of aromas to the fermentation profile along side the roast and caramel flavors inherent to the malt. Strong chocolate and toasted nuts aroma are added in new make spirit. Secondary aromas created consist of roasted grains, burnt toast and dried fruits.

Malt Specifications

Ingredient declaration:	Crystal Malted Barley
Allergen Information:	Contains Gluten
Topnotes expeted in spirit:	Robusta Coffee & Dark toffee

Typical Analysis:

Parameter	Unit	Crystal Malt 400
Attenuation	%	73
OG		12.5
FG		3.4
Moisture	%	< 5
Fermentability	%	<30
PSY	LAT	130
Soluble Extract asis	%	69
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	>74



Cara Malt 30

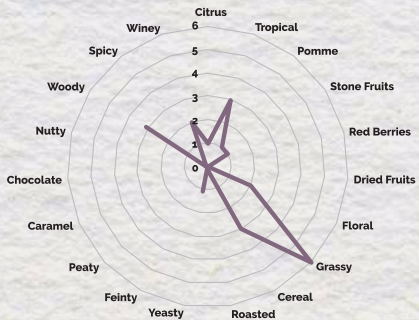
Cara Malt 30 is a low color crystal malt which adds some low color complex sugars to the grist. This adds depth and variety to the aromas generated during fermentation. In new make spirit, this product adds a slight tropical fruit note which is paired with a fresh green grass aroma.

Malt Specifications

Ingredient declaration:	Crystal Malted Barley
Allergen Information:	Contains Gluten
Topnotes expeted in spirit:	Caramel and Sweet

Typical Analysis:

Parameter	Unit	Cara Malt 30
Attenuation	%	91
OG		11.6
FG		1
Moisture	%	< 8
Fermentability	%	>70
PSY	LAT	310
Soluble Extract asis	%	70
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	74



Malted Wheat Flakes

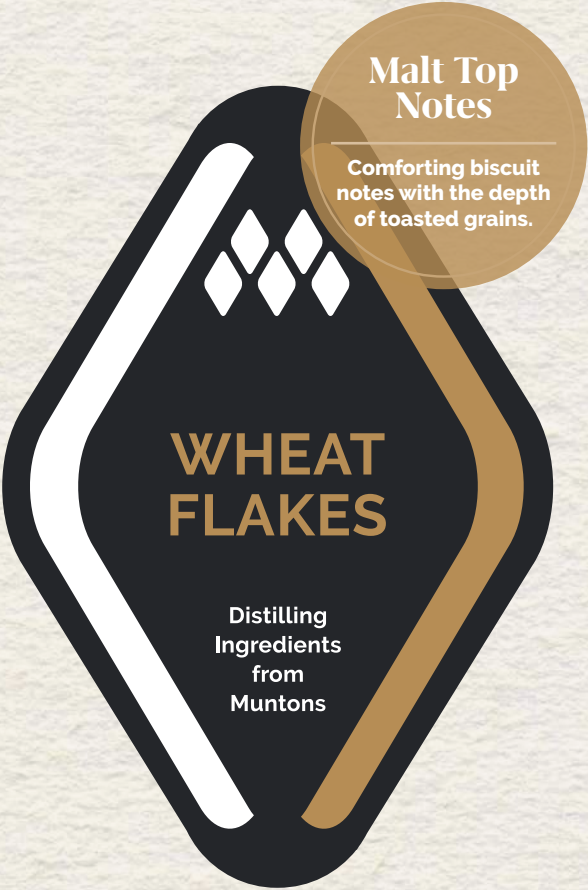
Muntons Malted Wheat Flakes are a speciality wheat malt product made in Muntons drum maltings. The specialised malting and kilning profile give the wheat malt flakes an enhanced flavor in compaision to standard brewing wheat malt. The malted flakes are micronised to further intensify the flavor and add toasted grain notes. This product adds a strong cereal character to new make spirit while also heightening estery fruit flavors during fermentation.

Malt Specifications

Ingredient declaration:	Malted Wheat
Allergen Information:	Contains Gluten
Topnotes expeted in spirit:	Biscuit and Toasted Grain

Typical Analysis:

Parameter	Unit	Wheat Flakes
Attenuation	%	90
OG		14.2
FG		1.4
Moisture	%	< 9
Fermentabillity	%	>55
PSY	LAT	180
Soluble Extract asis	%	52
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	67



Roasted Malt Extract

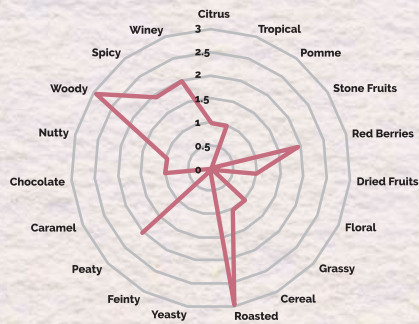
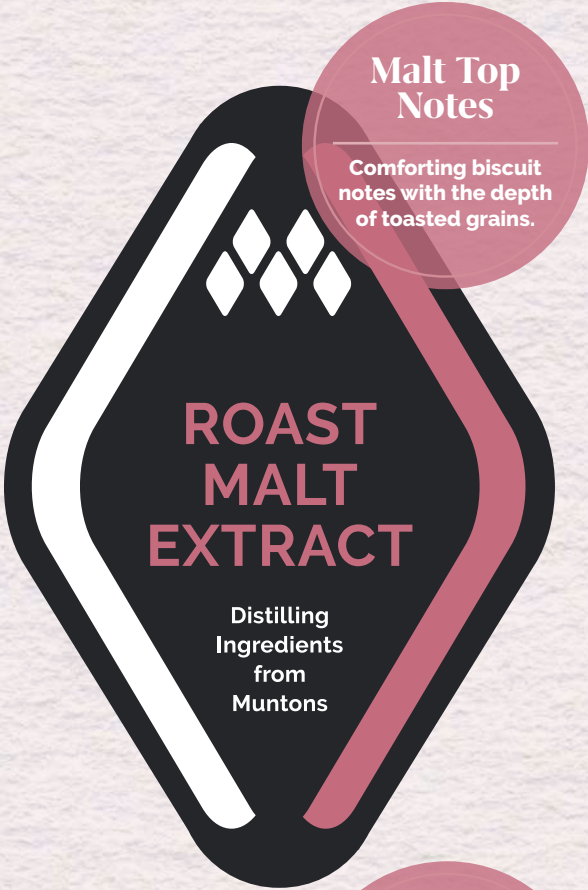
Muntons Roasted Malt Extract is a speciality liquid extract made from 100% black malt. This extract adds a strong amount of roast and burnt flavors to the wash. In the new make spirit the extract adds a strong wood and spice note paired with a roast aroma and citrus fruit.

Malt Specifications

Topnotes expeted in spirit: Robusta Coffee & Dark Toffee

Typical Analysis:

Parameter	Unit	Roasted Malt Extract
Attenuation	%	64
OG		-
FG		6.2
Moisture	%	-
Fermentabillity	%	<10
PSY	LAT	30
Soluble Extract asis	%	54
Phenol	ppm	0
DP IOB		-
Grist sol ex	%	70



For more information please contact Muntons sales.



Muntons

PASSIONATE ABOUT MALT SINCE 1921


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