

DISCOVERING THE WORLD OF MALT.

2020 CRAFT PORTFOLIO

 VIKING MALT



Dear Friends,

malt and beer are safe choices for all of us who are environmentally responsible consumers (as we all are!). Over the past decades, the malting and brewing industry has become a modern and efficient industry whose effects on the environment have decreased remarkably.

We produce malt mainly from locally grown barley. Farming methods and modern varieties help to minimize nutrient leakage.

Our by-products and side fractions are typically used as feed.

An old saying is that brewmasters got their salaries from spent grains sales...

In processing, utility consumptions are reduced by introducing new technologies and methods. Carbon dioxide can be collected from fermentation and utilized later in the process or for other applications. New filtration technologies do not require any filtration aids at all, which reduces waste. Packages have been refilled or materials have been circulated for years.

Last but not least, this industry has always worked together as chain, looking at the process from field to bottle as one continuum where also small steps of development are important. That helps us to make further improvements that are crucial for not only the beer drinkers and but for everyone on this planet.

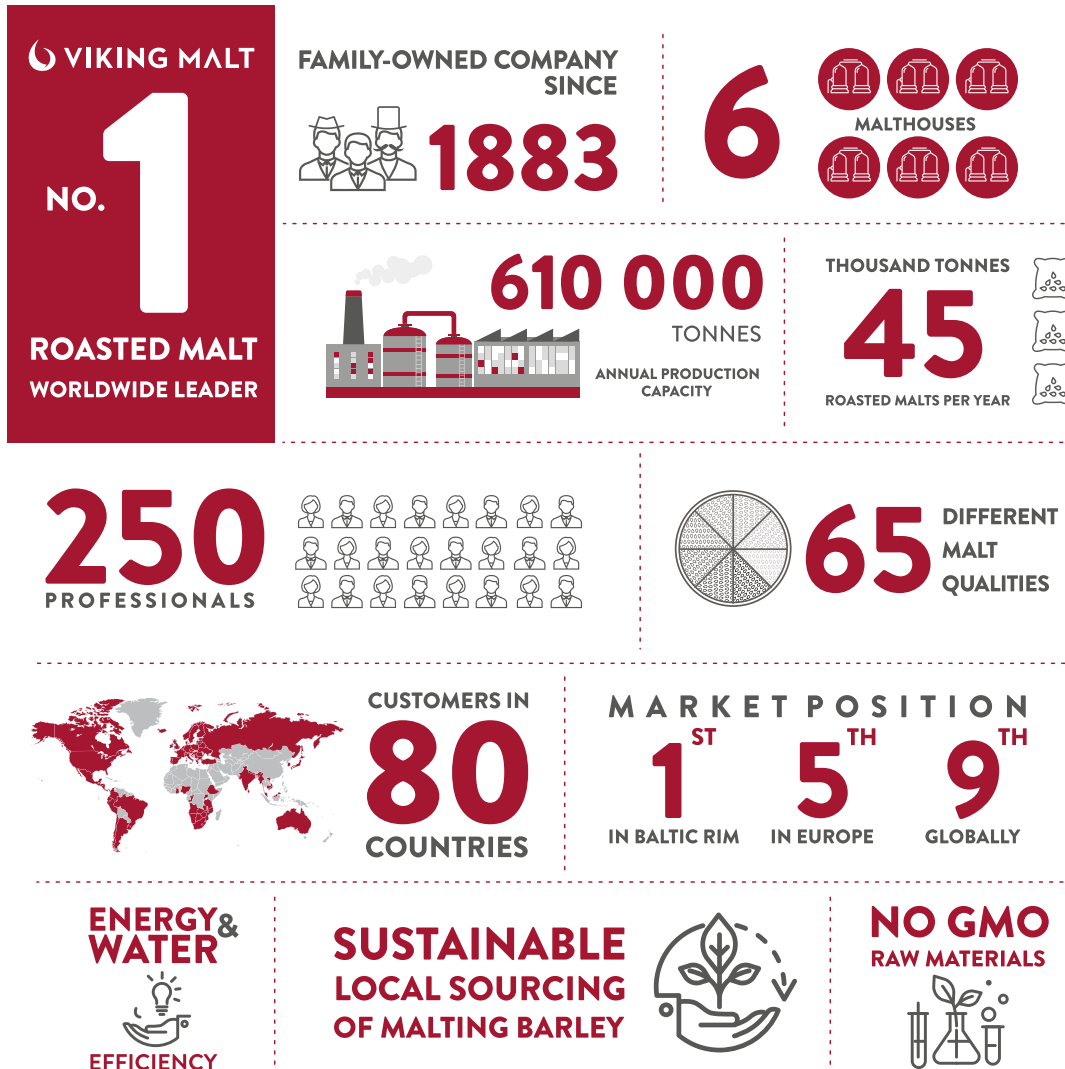
Please find our new malt portfolio in this booklet, that – by the way – uses a bit less paper than earlier.

Cheers!

Timo Huttunen

OUR MALTHOUSES





OUR GRAINS

The raw materials of our malts grow in the northernmost farming areas of the world where the circumstances for barley cultivation are optimal.

The farms are audited that enables easy communication with farmers about the quality and practices.

KEY POINTS

- ☑ We buy only contract grown malting barley.
- ☑ Our traceability is easy when grains are transported directly from the farms to the maltings.
- ☑ We actively develop and test new varieties together with breeders, farmers and customers.
- ☑ Clean environment and good climate with proper seasons lead to low contamination levels and safe raw material.
- ☑ We create added value by using varieties and qualities that are preferred by the customers.

VARIETIES

| MALT TYPE | FINLAND | POLAND |
|----------------------|---|-----------------------------|
| Pilsner and Pale Ale | Barke, Tipple, Harbinger, Planet, Trekker | Explorer, Propino, Planet |
| Zero* Malts | Charmay and Charles | Charles and Chanson |
| Special Malts | Tipple & Harbinger | Malwinta, Propino, Explorer |
| Enzyme Malts | Polartop & Pekka | - |

*Zero malts are produced from the so called null-LOX varieties. Those varieties are missing the certain enzyme called Lipoxygenase. This enzyme is needed in enzymatic oxidation of beer that mainly cause the papery flavor during aging. By using the Zero malts the shelf-life of beer can be improved and fresh taste lasts longer.

THE VALUE WE CREATE

CLIMATE CHANGE

HEALTH&WELLNESS

MARKET CONSOLIDATION

DIGITALIZATION

OUR ASSETS

NATURAL RESOURCES

CEREALS GRAINS 700 KT
WATER
ENERGY

PHYSICAL ASSETS

PRODUCTION
IN 5 COUNTRIES

OUR PEOPLE

0 EXPERIENCED EMPLOYEES

PARTNERS

SUPPLIERS
SALES DISTRIBUTORS

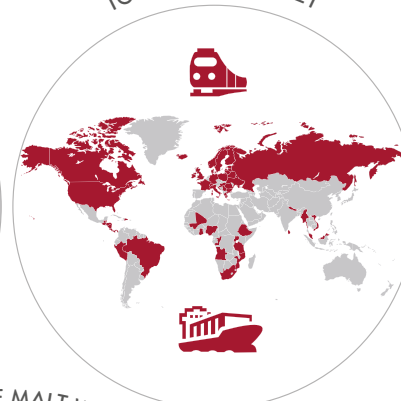
FINANCIAL ASSETS

TOTAL ASSETS 2018 €200M

FROM LOCAL SOURCING



TO GLOBAL MARKET



WE CREATE MALT WITH

functionality,
flavor, color
texture, enzymes,
minerals, vitamins

VALUE CREATED

CUSTOMERS & CONSUMER!

- We manage quality and food safety through excellence in local sourcing and best supply chain
- We serve both small and large customers

SUPPLIERS & SOCIETY

- We co-operate with local farmers in developing business and cultivation

EMPLOYEES

- We provide safe and attractive workplace
- We offer opportunities to develop competence and skills

SHAREHOLDERS

- Return on capital

DISCOVERING THE WORLD OF MALT.

WE VALUE INNOVATION HIGHLY AND ARE KEEN
TO EXPLORE NEW OPPORTUNITIES FOR MALTED AND SPROUTED GRAINS

NEW PRODUCTS ENTERING THE **PORTFOLIO 2020**

NEW! **VIKING CARABODY MALT**

Viking CaraBody Malt is gently malted and slightly caramelized special malt product. Flavor is soft and balanced, containing clear cereal note. Taste impact is in modest but slight sweetness and malty notes can be found. Main intention of this malt is to give extra body into any beer but especially to low colored beers like lagers. This malt will also improve head retention and foam quality. Viking CaraBody Malt is produced from 2-row brewing barley.

NEW! **VIKING OAT MALT**

Viking Oat Malt is traditionally malted oat. Oat Malt comes with natural large husk that supports sieving operation. The taste is very soft and the impact of it is more balancing being a great base for many hop and malt cocktails. Viking Oat Malt is also expected to bring creamy and velvety mouthfeel into your beer.

PRODUCTS LEAVING THE PORTFOLIO 2020

OUT! **VIKING CARAMEL WHEAT**

Due the poor availability of organic crop also

OUT! **VIKING WHEAT MALT ORGANIC** will leave our portfolio



WHAT WE OFFER

LIST OF MALTS

BREWER'S CLASSIC

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BREWER'S CLASSIC

VIKING PILSNER MALT

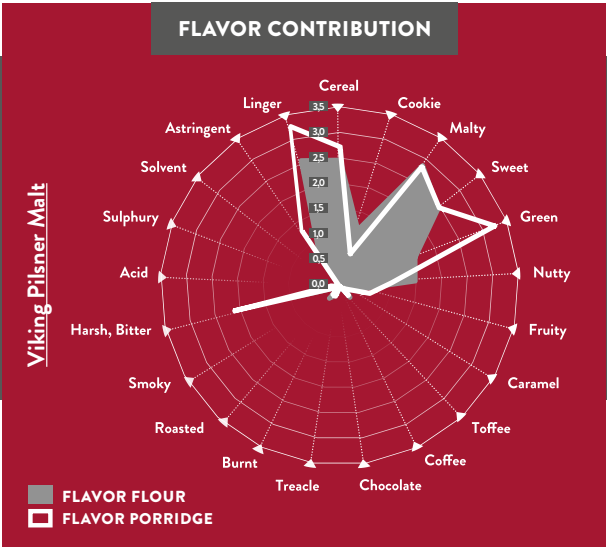


MALT CHARACTER

Viking Pilsner Malt is made from 2-row spring barley. Steeping and germination conditions are chosen to promote even germination and homogenous modification. The final air-on temperature in kilning is typically 80–85°C. **Pilsner malt flavor is usually described as malty, slightly nutty and sweet.** Great malt for all malt beers but there is enough activity and character for base malt use in many brewing applications.

APPLICATIONS

For all kinds of beers or whiskies. The color of Viking Pilsner Malt is low.



MALT SPECIFICATION

| | | |
|---------------------|---------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 80.0 |
| COLOR | °EBC | 3.3–4.3 |
| PROTEIN | % dm | max. 11.5 |
| SOL. NITROGEN | mg/100g | 600-750 |
| FREE AMINO NITROGEN | mg/l | 130–170 |
| BETA-GLUCAN | mg/l | max. 200 |
| FRIABILITY | % | min. 80 |
| DIASTATIC POWER | WK dm | min. 250 |

PRODUCTION:



PACKAGING:



VIKING PALE ALE MALT



MALT CHARACTER

Viking Pale Ale Malt is made from 2-row spring barley. High degree of modification promotes easy processing. **Flavor contributes specially to malty, sweet and nutty notes.** It is ideal malt for ales and special lagers. The coloring power of Viking Pale Ale Malt is not too strong, which makes it also suitable for subtle color correction of regular lagers.

APPLICATIONS

For all kinds of beers or whiskies. The color of Viking Pale Ale Malt is rather low. Usage rate up to 100%.

MALT SPECIFICATION

| | | |
|---------------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 80.0 |
| COLOR | °EBC | 4-7 |
| PROTEIN | % dm | max. 11.5 |
| KOLBACH INDEX | % | min. 43 |
| FREE AMINO NITROGEN | mg/l | min. 130 |
| BETA-GLUCAN | mg/l | max. 200 |

PRODUCTION:



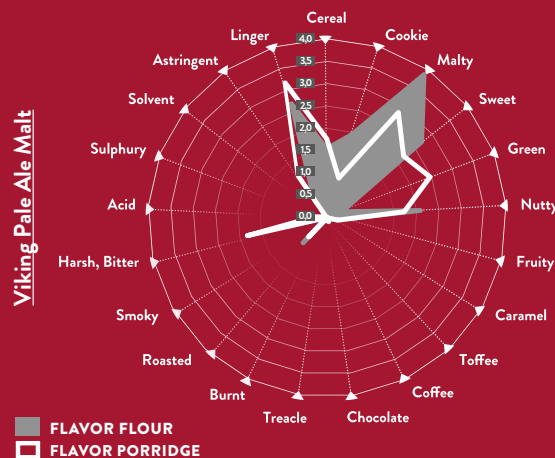
Finland Poland Sweden

PACKAGING:



Bags Big bags Containers Bulk

FLAVOR CONTRIBUTION



VIKING PILSNER ZERO MALT



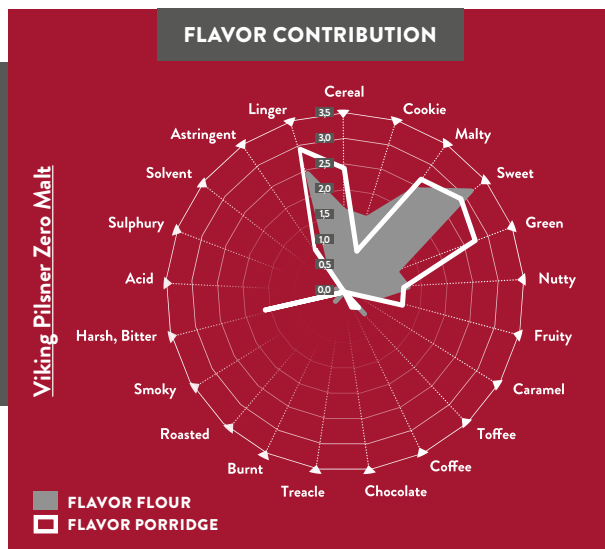
MALT CHARACTER

Viking Pilsner Zero Malt is made from 2-row null-LOX spring barley. As a special feature in null-LOX varieties is that Lipoxygenase activity is zero, affecting positively on flavor stability of beer. Steeping and germination conditions are chosen to promote even germination and homogenous modification. The final air-on temperature in kilning is typically 80-85°C.

Viking Pilsner Zero Malt flavor is very close to traditional pilsner malt and usually described as malty, slightly nutty and sweet. Great malt for all malt beers but there is enough activity and character for base malt use in many brewing applications.

APPLICATIONS

For all kinds of beers. Dosage rate up to 100%.



MALT SPECIFICATION

| | | |
|---------------------|---------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 80.0 |
| COLOR | °EBC | 3.0-4.3 |
| PROTEIN | % dm | max. 11.5 |
| SOL. NITROGEN | mg/100g | max. 775 |
| FREE AMINO NITROGEN | mg/l | 130-185 |
| BETA-GLUCAN | mg/l | max. 200 |
| FRIABILITY | % | min. 80 |
| DIASTATIC POWER | WK dm | min. 250 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING VIENNA MALT



MALT CHARACTER

Viking Vienna Malt is cured at slightly higher temperatures than pilsner malt. Consequently Vienna Malt gives a golden colored beer and increases body and fullness. Due to the higher curing temperature, the enzyme activity of Vienna Malt is slightly lower than that of pilsner malt. **Flavor of Viking Vienna Malt is subtle, including maltiness, some sweetness and hints of caramel aromas.** Slightly nutty sensations can also be found.

APPLICATIONS

Viking Vienna Malt is well suited for relatively pale colored beers. Typical application is to enhance color and aroma of light beers. Vienna Malt also has its own beer type, Vienna lager, which is famous for its deep golden color and malty taste.

MALT SPECIFICATION

| | | |
|---------------------|--------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 79.0 |
| COLOR | °EBC | 7-10 |
| FREE AMINO NITROGEN | min. | 130 |
| SACCHARIFICATION | min. | max. 15 |
| FRIABILITY | min. | 80 |
| PROTEIN | % d.m. | max. 12.0 |

PRODUCTION:



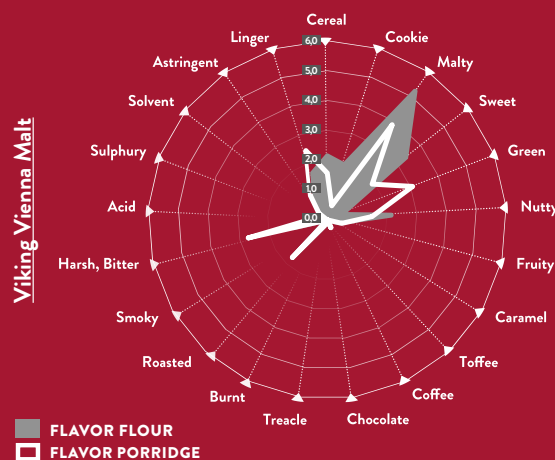
Finland Poland

PACKAGING:



Bags Big bags Containers Bulk

FLAVOR CONTRIBUTION



VIKING WHEAT MALT

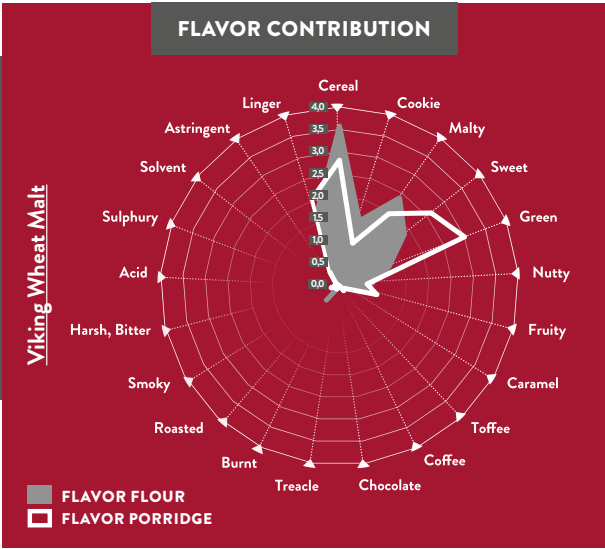


MALT CHARACTER

Viking Wheat Malt is made from high quality wheat. Varieties suitable for the brewing purposes are used. The malting process does not differ much from pilsner malt production. Final air-on temperature is normally 72-80°C.

APPLICATIONS

Viking Wheat Malt is used mainly for wheat beers and some other top fermented beers. Wheat Malt is also used for lager beers for flavor enrichment and to improve foam stability. Typical rate of usage is around 50% of the grist for wheat beers and appr. 20% for the premium lagers.



MALT SPECIFICATION

| | | |
|-------------------------------|----------|-----------|
| MOISTURE | % | max. 6.0 |
| EXTRACT FINE | % dm | min. 82.0 |
| COLOR | °EBC | 3.5-6.5 |
| PH | | 5.7-6.3 |
| PROTEIN | % dm | max. 13.0 |
| SOL. NITROGEN | mg/100 g | max. 800 |
| FREE AMINO NITROGEN | mg/l | 90-150 |
| VISCOSITY (measured at 8.6 %) | mPas | max. 2.0 |
| DIASTATIC POWER | WK dm | min. 250 |

PRODUCTION:



PACKAGING:



 VIKING MALT

BREWER'S SPECIAL

NEW!

VIKING CARABODY MALT

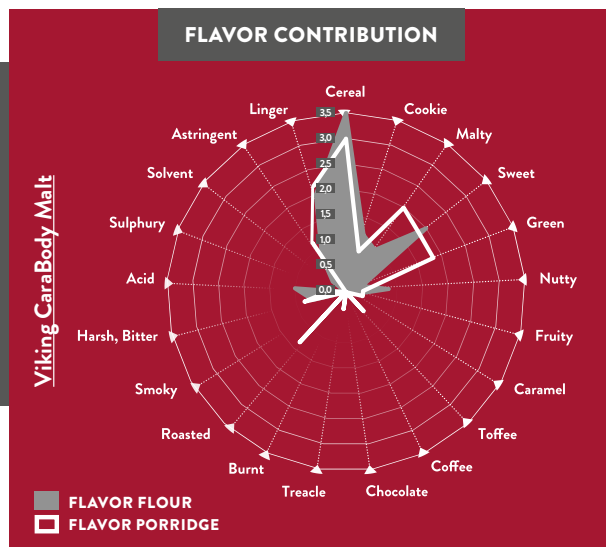


MALT CHARACTER

Viking CaraBody Malt is gently malted and slightly caramelized special malt product. **Flavor is soft and balanced containing clear cereal note.** Taste impact is in general low, but some sweetness and malty notes can be found. Main intention of this malt is to give body into any beer, but especially low colored beers. This malt will also support head retention. Viking CaraBody Malt is produced from 2-row spring barley.

APPLICATIONS

For all kinds of beers. Dosage rate up to 10%.



MALT SPECIFICATION

| | | |
|--------------|------|----------|
| MOISTURE | % | max. 7.0 |
| EXTRACT FINE | % dm | 75.0 |
| COLOR | °EBC | max. 8.0 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Bulk

NEW!

VIKING OAT MALT



MALT CHARACTER

Viking Oat Malt is traditionally malted oat. Oat Malt comes with natural large husk that gives supports during sieving operation. **The taste of Viking Oat Malt is soft and the impact of it is more balancing being a great base for many hop and malt cocktails.** Oat malt is also expected to bring creamy and velvety mouthfeel into your beer.

APPLICATIONS

For many kinds of beers. Dosage rate up to 20 (30)%

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 7.0 |
| EXTRACT FINE | % dm | min. 60.0 |
| COLOR | °EBC | 3.5-7.0 |

PRODUCTION:



Finland

PACKAGING:



Bags

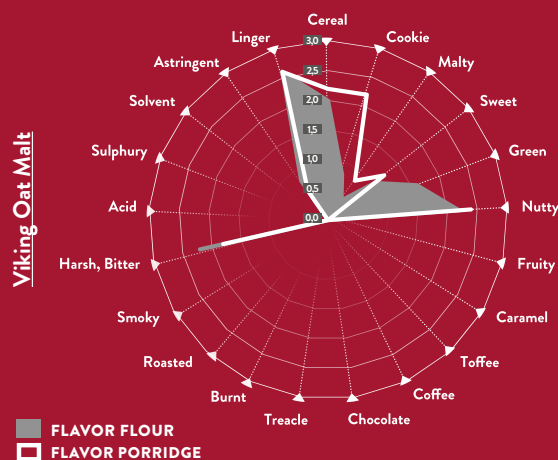


Big bags



Bulk

FLAVOR CONTRIBUTION



VIKING RED ACTIVE MALT

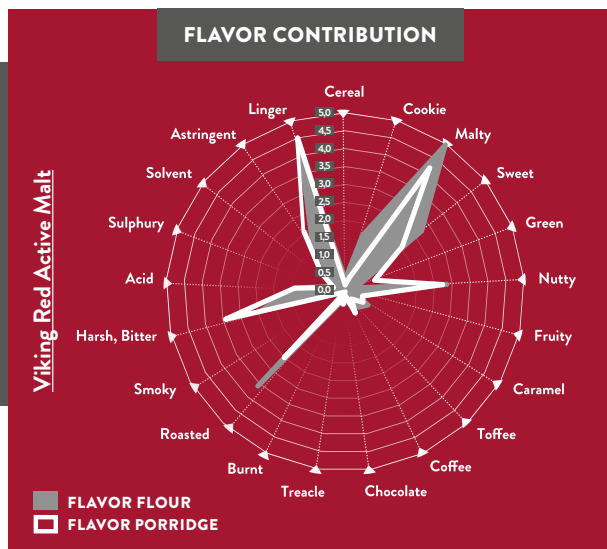


MALT CHARACTER

The unique characteristics of this exceptional malt are based on a special variety and a complex malting process with a curing temperature over 100°C. Viking Red Active Malt gives a pure malty, nutty and clean long-lasting flavor together with unique amylase activities for this color level. This is a real single variety malt for any reddish brew.

APPLICATIONS

Viking Red Active Malt is ideal malt for any ales, dark lagers, festival beers and bocks for underlining malty flavors and full bodied taste, but also boosting up the red tinted colors. The strong enzyme activity gives good potential for developing recipes with adjuncts or non active malts. With this malt if you are heading to strong reddish color you do not need to dilute color down with pale malts. Dosage up to 100%.



MALT SPECIFICATION

| | | |
|------------------|-------|-----------|
| MOISTURE | % | max. 4.5 |
| EXTRACT FINE | % dm | min. 79 |
| COLOR | °EBC | 30–40 |
| FAN | mg/l | min. 140 |
| SACCHARIFICATION | min | max. 20 |
| PH | | max. 5.6 |
| PROTEIN | % dm | max. 12.5 |
| DIASTATIC POWER | WK dm | min. 230 |
| DMSP | ppm | < 2,5 |
| ATTENUATION | % | min. 76 |

PRODUCTION:



Finland

PACKAGING:



Bags



Big bags



Bulk

VIKING RED ALE MALT



MALT CHARACTER

Viking Red Ale Malt is aromatic malt rich in melanoidins. It is recommended for dark beers to enhance reddish color and aroma. A special malting program is used to ensure the right flavor and aroma through controlled Maillard reaction. Flavor of Viking Red Ale Malt is malty and bitter but also roasted and nutty flavors can be found with longlasting linger. Red Ale Malt is also slightly acidic. The amylolytic activity of Red Ale Malt is low.

APPLICATIONS

Viking Red Ale Malt is strongly aromatic malt, with coloring capability. **It is ideal for special ales like APA, IPA, red ales and dark lagers.** Recommended usage is up to 20% of the grist.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 75.0 |
| COLOR | °EBC | 70±10 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags

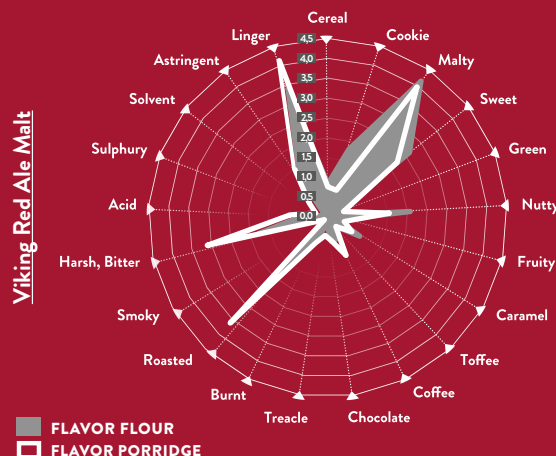


Containers



Bulk

FLAVOR CONTRIBUTION



VIKING CHOCOLATE LIGHT MALT

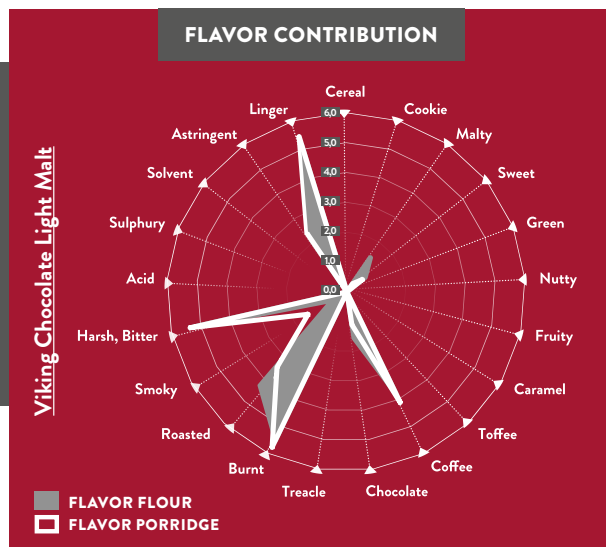


MALT CHARACTER

Viking Chocolate Light Malt is produced by roasting from pilsner malt. The amylolytic activity of Chocolate Light Malt is zero. The amount of fermentable extract is rather low.

APPLICATIONS

Viking Chocolate Light Malt is mainly included in for porters and stouts, but it can also be used for any other dark colored beers like dark ales due to its strong coloring value. Chocolate Light Malt contributes roasted flavors and aromas with hints of dark chocolate and coffee in any beer. Already with rather low dosage portions a remarkable increase in color can be found together with changes in flavor and aroma. Typical dosage rate of Viking Chocolate Light Malt is normally under 5–10%.



MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 68.0 |
| COLOR | °EBC | 350–450 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING CHOCOLATE DARK MALT



MALT CHARACTER

Viking Chocolate Dark Malt is produced by roasting from pilsner malt. Final temperature and roasting time is somewhat lower compared to our Black Malt. The amylolytic activity of Viking Chocolate Dark Malt is zero. The amount of fermentable extract is rather low.

APPLICATIONS

Viking Chocolate Dark Malt is mainly included in grists for porters and stouts, but it can also be used for any other dark colored beers like dark ales due to its strong coloring value. Chocolate Dark Malt contributes roasted flavors and aromas with hints of dark chocolate and coffee in any beer. Already with rather low dosage portions a remarkable increase in color can be found together with changes in flavor and aroma. Typical dosage rate of Chocolate Dark Malt is normally under 10%.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 67.0 |
| COLOR | °EBC | 800–1000 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION



VIKING MUNICH LIGHT & DARK MALTS

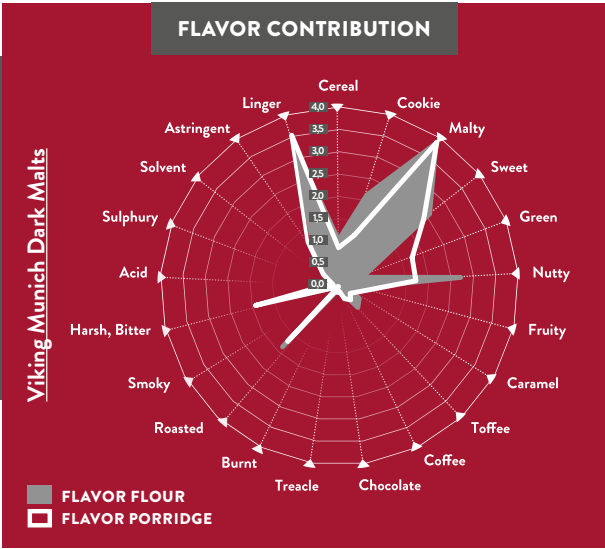


MALT CHARACTER

Curing temperatures in the range of 110–120°C give the malt an aromatic, nutty character. The high curing temperature results in clearly reduced enzyme activities compared to Pilsner Malt.

APPLICATIONS

Viking Munich Malt is ideal malt for dark lagers, festival beers and bocks for underlining malty flavors and full bodied taste. The decreased enzyme activities have to be taken into consideration when designing the brewing recipe.



MALT SPECIFICATION

| | | |
|---------------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 78.0 |
| COLOR (LIGHT) | °EBC | 14–18 |
| COLOR (DARK) | °EBC | 20–24 |
| FREE AMINO NITROGEN | mg/l | min. 120 |
| PROTEIN | % dm | max. 12.0 |
| SACCHARIFICATION | min. | max. 15 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING CARAMEL MALTS



MALT CHARACTER

Viking Caramel Malts are made from green malt. A high degree of caramelization is characteristic of this malt. The amylolytic activity of Caramel Malts is zero. Maillard products formed in the process can act as antioxidants and contribute to flavor stability. Caramel Malts usually improve foam quality and head retention.

APPLICATIONS

Viking Caramel Malts are well suited for winter beers, ale-type beers and other aromatic beers like dark lagers and stouts. Small amounts can be used for color adjustment and flavor enrichment of pale lagers as well.

MALT SPECIFICATION

| | | |
|-------------------------------|------|-----------|
| MOISTURE (CARAMEL 30) | % | max. 7.0 |
| EXTRACT FINE (CARAMEL 30-200) | % DM | min. 75.0 |
| COLOR (CARAMEL 30) | °EBC | 30 ± 5 |
| COLOR (CARAMEL 50) | °EBC | 50 ± 10 |

PRODUCTION:



Finland Poland

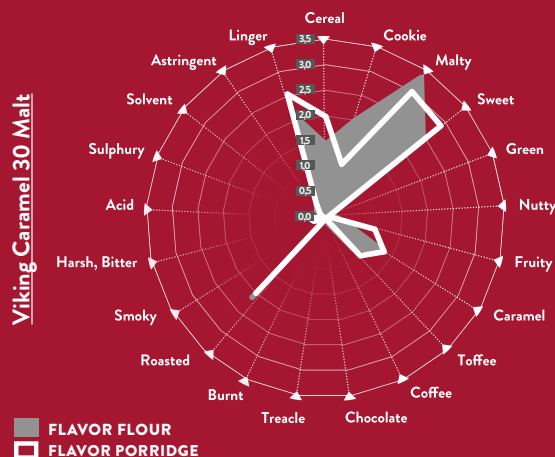
PACKAGING:



Bags Big bags Containers Bulk

CARAMEL 30, 400, 600
- PRODUCED ONLY
IN POLAND

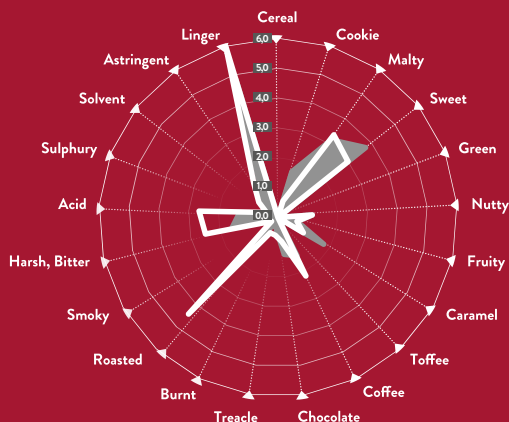
FLAVOR CONTRIBUTION



VIKING CARAMEL MALTS

Viking Caramel 100 Malt

FLAVOR CONTRIBUTION

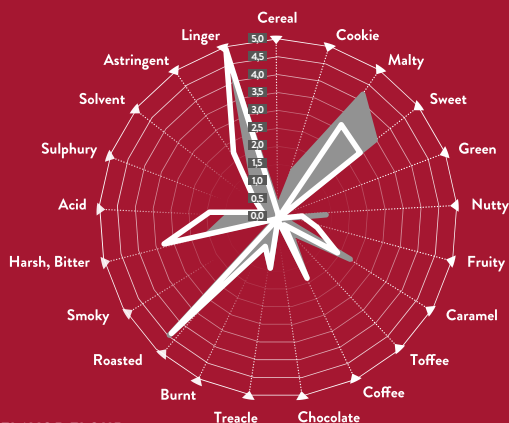


MALT SPECIFICATION

| | | |
|--------------------------|------|-----------|
| MOISTURE (CAMEL 50-600) | % | max. 6.0 |
| EXTRACT FINE (CAMEL 300) | % dm | min. 73.0 |
| COLOR (CAMEL 100) | °EBC | 100 ± 10 |
| COLOR (CAMEL 150) | °EBC | 150 ± 10 |
| COLOR (CAMEL 200) | °EBC | 200 ± 20 |

Viking Caramel 200 Malt

FLAVOR CONTRIBUTION



PRODUCTION:



Finland Poland

CAMEL 30, 400, 600
- PRODUCED ONLY
IN POLAND

PACKAGING:



Bags Big bags Containers Bulk

VIKING CARAMEL MALTS



MALT SPECIFICATION

| | | |
|--------------------------------|------|-----------|
| MOISTURE (CARAMEL 50-600) | % | max. 6.0 |
| EXTRACT FINE (CARAMEL 400-600) | % dm | min. 68.0 |
| COLOR (CARAMEL 300) | °EBC | 300 ± 30 |
| COLOR (CARAMEL 400) | °EBC | 400 ± 50 |
| COLOR (CARAMEL 600) | °EBC | 600 ± 50 |

PRODUCTION:



Finland Poland

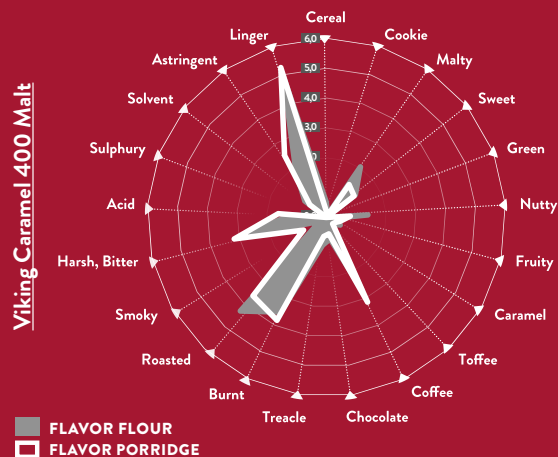
CARAMEL 30, 400, 600
- PRODUCED ONLY
IN POLAND

PACKAGING:

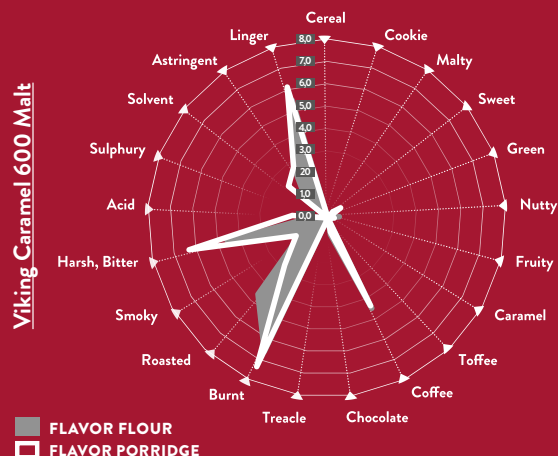


Bags Big bags Containers Bulk

FLAVOR CONTRIBUTION



FLAVOR CONTRIBUTION



VIKING CARAMEL PALE

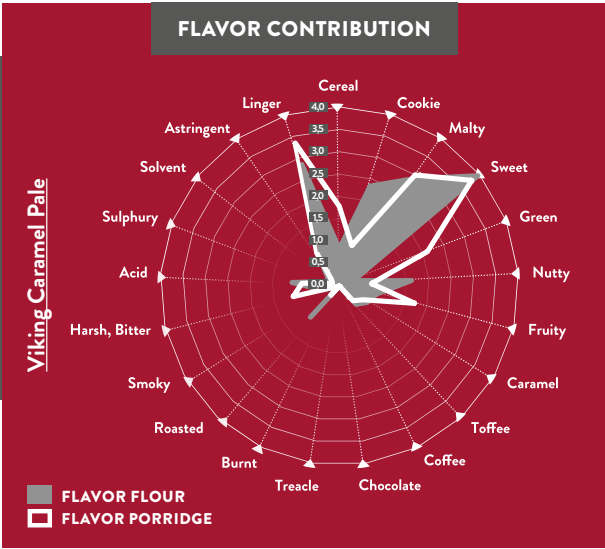


MALT CHARACTER

Viking Caramel Pale Malt is produced from green malt. Despite the low color value Viking Caramel Pale Malt is true caramel malt, i.e. the starch has been gelatinized and saccharified within the kernel. Caramel Pale is sweet and caramel like having also toffee and fruity notes. The enzymatic activity of Viking Caramel Pale is negligible.

APPLICATIONS

Viking Caramel Pale is used to produce a full-bodied beer with a clean, round flavor. **Due to its low color value it is suitable also for light colored beers.** Dosage rate is typically up to 30%.



MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 7.5 |
| EXTRACT FINE | % dm | min. 77.0 |
| COLOR | °EBC | 8 ± 2 |

PRODUCTION:



PACKAGING:



VIKING COOKIE MALT



MALT CHARACTER

Viking Cookie Malt is produced by roasting from high quality pilsner malt. The amylolytic activity of Cookie Malt is negligible. As its name stands Viking Cookie Malt contributes mild and pleasant roasted cereal flavors and aromas with hints of pop-corn and biscuits.

APPLICATIONS

Viking Cookie Malt is mainly included in grist for ales and lagers, but it can also be used for any beer where nice golden color and typical flavors are favored. Already with rather low dosage portions the effect on flavor can be noted. Typical dosage rate of Viking Cookie Malt is normally under 20%.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 6.0 |
| EXTRACT FINE | % dm | min. 72.0 |
| COLOR | °EBC | 40–60 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags

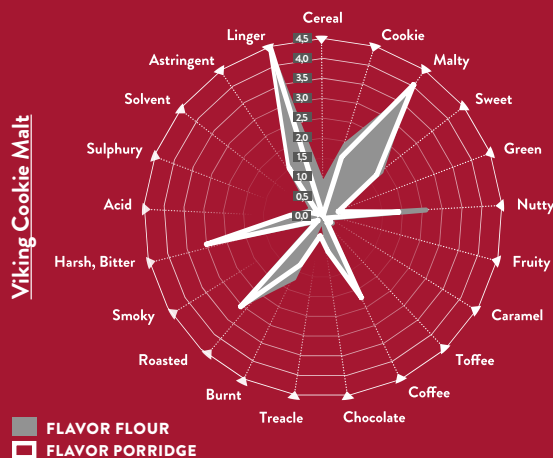


Containers



Bulk

FLAVOR CONTRIBUTION



VIKING DEXTRIN MALT

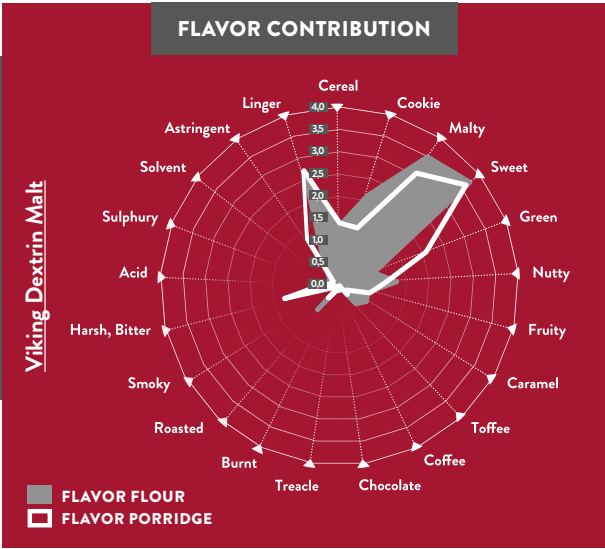


MALT CHARACTER

Viking Dextrin Malt has an outstanding flavor after going through special steeping and germination conditions and prolonged kilning program. During first steps of kilning the green malt is put through demanding kilning conditions before long lasting mild drying period. The amylolytic activity of this Viking Dextrin Malt is modest.

APPLICATIONS

Viking Dextrin Malt can be used in grists for ales and lagers to give fullness and sweetness in overall taste, supporting good head retention. As Dextrin Malt is light colored with not too overwhelming taste dosage rate can be up to 30%.



MALT SPECIFICATION

| | | |
|----------------------|--------|-----------|
| MOISTURE | % | max. 6.5 |
| EXTRACT FINE | % dm | min. 79.0 |
| COLOR | °EBC | 10–16 |
| PROTEIN | % d.m. | min. 10.0 |
| APPARENT ATTENUATION | % | min. 70 |
| FREE AMINO NITROGEN | mg/l | 140–180 |
| DIASTATIC POWER | WK dm | 120–180 |

PRODUCTION:



PACKAGING:



VIKING GOLDEN ALE MALT



MALT CHARACTER

Viking Golden Ale Malt is made from 2-row spring barley. Malting process parameters have been chosen to promote high degree of modification for easy processing. Viking Golden Ale Malt has reduced enzymatic potential. Strong flavor contributes malty, cookie, sweet and nutty notes with great balance of those. Golden Ale Malt is ideal for ales and special lagers. The coloring power of Golden Ale Malt is not too high, which makes it also suitable for subtle color correction of regular lagers giving noticeably hue towards gold.

APPLICATIONS

For all kinds of beers but specially golden color ales and lagers. Usage rate up to 50%.

MALT SPECIFICATION

| | | |
|---------------------|--------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 80.0 |
| COLOR | °EBC | 9–14 |
| PROTEIN | % d.m. | max. 12.0 |
| FREE AMINO NITROGEN | mg/l | min. 130 |
| KOLBACH INDEX | % | min. 43 |
| FRIABILITY | % | min. 75 |

PRODUCTION:



Finland

PACKAGING:



Bags

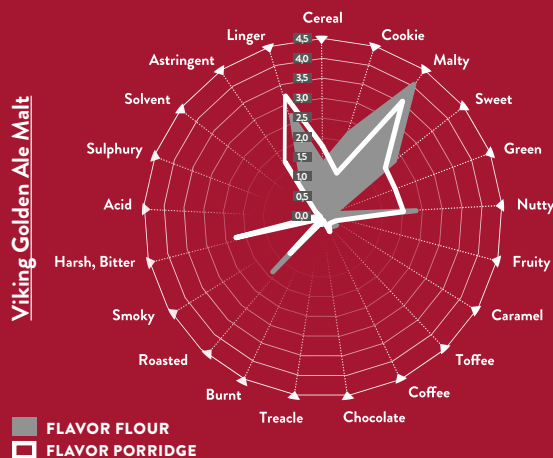


Big bags



Bulk

FLAVOR CONTRIBUTION



VIKING RYE MALT

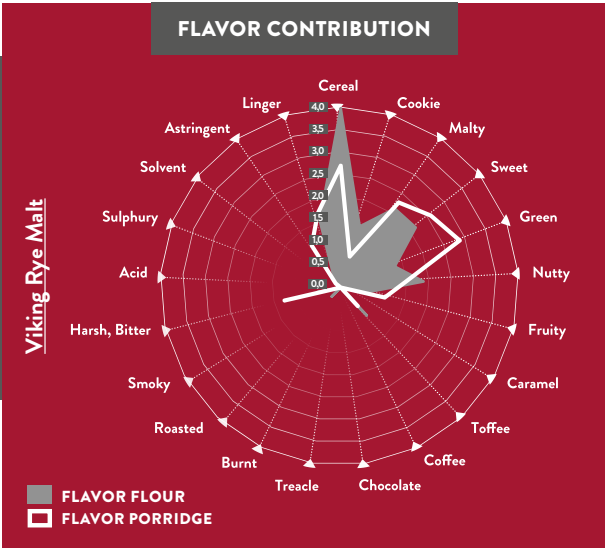


MALT CHARACTER

Viking Rye Malt is produced from high quality rye. The malting process does not differ much from pilsner malt production. Final air-on temperature is normally 72-80°C.

APPLICATIONS

Viking Rye Malt can be used in breweries specialty rye beers, Rye Lager, Rye Ale. Gives golden color and typical rye flavor. We recommend to keep the dosage of Viking Rye Malt under 7% to avoid wort separation problems.



MALT SPECIFICATION

| | | |
|----------|------|-----------|
| MOISTURE | % | max. 6.0 |
| EXTRACT | % dm | min. 81.0 |
| COLOR | °EBC | 4-10 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING BLACK MALT



MALT CHARACTER

Viking Black Malt is produced by roasting pilsner malt. Final temperature is more than 200°C. The amylolytic activity of Black Malt is zero. The amount of fermentable extract is low.

APPLICATIONS

Viking Black Malt is used in dark beers like stouts and porters, mainly for its strong coloring ability. Normally portions 1–2% give a remarkable increase in color without significant change in flavor. By raising the percentage of Black Malt in malt bill the changes in taste can be found quickly. Dosage rates more than 10% are rare.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 65.0 |
| COLOR | °EBC | 1300–1500 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION



VIKING PEARLED BLACK MALT

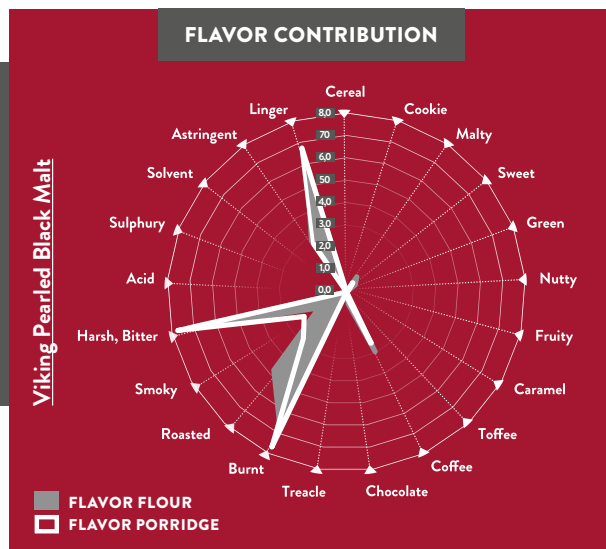


MALT CHARACTER

Viking Pearled Black Malt is produced by roasting pearled pilsner malt. Barley husk is removed by pearling before malting and roasting. Malt has bitterness due to pearling and nice dark-coffee color and aroma. Malt has no amylolytic activity and the amount of fermentable extract is low.

APPLICATIONS

Viking Pearled Black Malt is used in dark beers like stouts and porters, mainly for its strong coloring ability. Normally portions 1–2% give a remarkable increase in color without significant change in flavor. By raising the percentage of Pearled Black Malt in malt bill the changes in taste can be found quickly, but slower than for typical Black Malt. Dosage rates more than 10% are rare.



MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 65.0 |
| COLOR | °EBC | 800–1000 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING ROASTED BARLEY



MALT CHARACTER

Viking Roasted Barley is produced by roasting good quality malting barley grains. The roasting process is similar to that of Viking Black Malt with extra care taken to not burn the grain. Final temperature is more than 200°C.

APPLICATIONS

Viking Roasted Barley is used in dark beers like stouts and porters, mainly for its strong coloring ability. Roasted barley will impart a dry flavor and substantial color.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 71.0 |
| COLOR | °EBC | 900–1200 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION





BREWER'S ORGANIC

VIKING PILSNER MALT ORGANIC



MALT CHARACTER

Viking Pilsner Malt Organic is made from 2-row organic spring barley. Steeping and germination conditions are chosen to promote even germination and homogenous modification. The final air-on temperature in kilning is typically 80–85°C. Pilsner Malt Organic flavor is usually described as slightly nutty and biscuit.

APPLICATIONS

Viking Pilsner Malt Organic can be used for all kinds of organic beers or whiskies. The color of this malt is low.

MALT SPECIFICATION

| | | |
|---------------------|---------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 79.0 |
| COLOR | °EBC | 3–5 |
| PROTEIN | % dm | max. 12.5 |
| SOLUBLE NITROGEN | mg/100g | 600–900 |
| FREE AMINO NITROGEN | mg/l | min. 130 |
| FRIABILITY | % | min. 75 |
| DIASTATIC POWER | WK dm | min. 220 |

PRODUCTION:



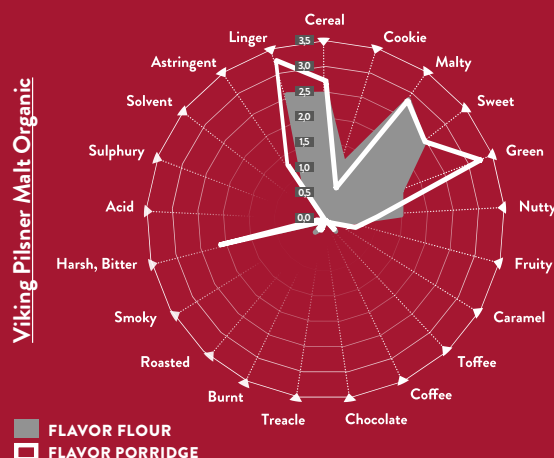
Finland Poland Sweden

PACKAGING:



Bags Big bags Containers Bulk

FLAVOR CONTRIBUTION



VIKING PALE ALE MALT ORGANIC

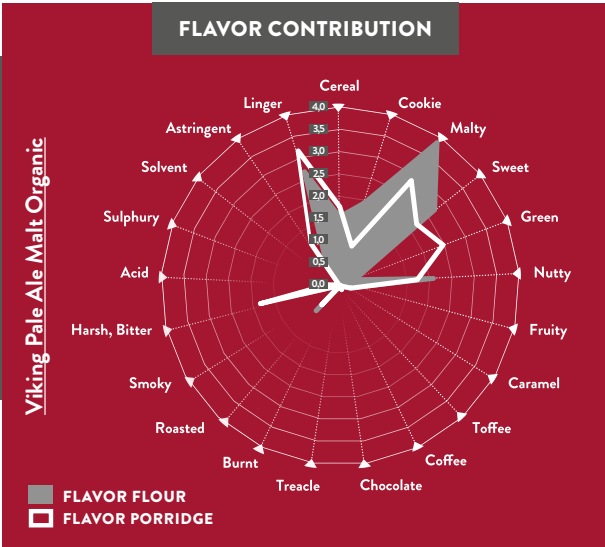


MALT CHARACTER

Viking Pale Ale Malt Organic is made from 2-row organic spring barley. High degree of modification promotes easy processability. Malt flavor contributes specially to sweet and nutty notes. It is ideal malt for ales and special lagers. The colouring power of Pale Ale Malt Organic is not too strong, which makes it also suitable for subtle color correction of regular lagers.

APPLICATIONS

For all kinds of beers or whiskies. The color of the Pale Ale Malt Organic is rather low.



MALT SPECIFICATION

| | | |
|---------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 78.0 |
| COLOR | °EBC | 4–7 |
| PROTEIN | % dm | max. 12.5 |
| KOLBACH INDEX | % | min. 43 |
| FRIABILITY | % | min. 75 |

PRODUCTION:



PACKAGING:



VIKING MUNICH LIGHT MALT ORGANIC



MALT CHARACTER

Curing temperatures in the range of 110–120°C give the malt an aromatic, nutty character. The high curing temperature results in clearly reduced enzyme activities compared to Pilsner Malt.

APPLICATIONS

Viking Munich Light Malt Organic is ideal malt for dark lagers, festival beers and bocks for underlining malty flavors and full bodied taste. The decreased enzyme activities have to be taken into consideration when designing the brewing recipe.

MALT SPECIFICATION

| | | |
|---------------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 78.0 |
| COLOR | °EBC | 14–20 |
| PROTEIN | % dm | max. 12.5 |
| FREE AMINO NITROGEN | mg/l | min. 130 |
| FRIABILITY | % | min. 75 |
| SACCHARIFICATION | min. | max. 15 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



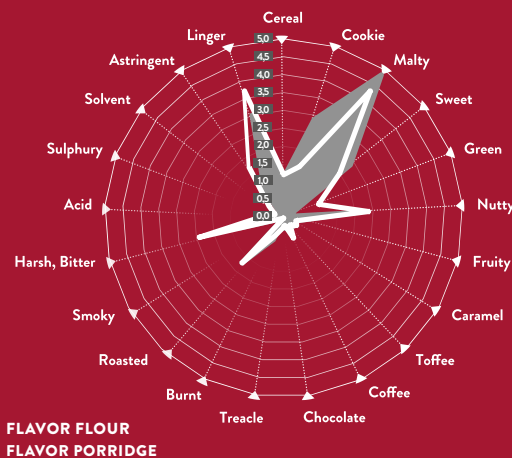
Containers



Bulk

FLAVOR CONTRIBUTION

Viking Munich Light Malt Organic



VIKING CARAMEL 100 MALT ORGANIC

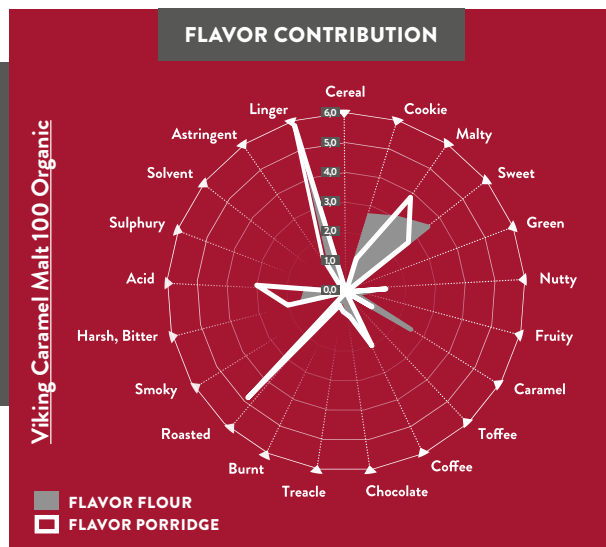


MALT CHARACTER

Viking Caramel 100 Malt Organic is made from organic green malt. A high degree of caramelization is characteristic of this malt. The amylolytic activity of Viking Caramel 100 Malt Organic is zero. Maillard products formed in the process can act as antioxidants and contribute to flavor stability. Viking Caramel 100 Malt Organic usually improves foam quality and head retention.

APPLICATIONS

Viking Caramel 100 Malt Organic is well suited for winter beers, ale-type beers and other aromatic beers like dark lagers and stouts. Small amounts can be used for color adjustment and flavor enrichment of pale lagers as well.



MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 6.0 |
| EXTRACT FINE | % dm | min. 75.0 |
| COLOR | °EBC | 100 ±10 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING BLACK MALT ORGANIC



MALT CHARACTER

Viking Black Malt Organic is produced by roasting organic pilsner malt. Final temperature is more than 200°C. The amylolytic activity of Black Malt Organic is zero. The amount of fermentable extract is low.

APPLICATIONS

Viking Black Malt Organic is used in stouts and porters, mainly for its strong coloring ability. Normally portions 1–2% give a remarkable increase in color without significant change in flavor. By raising the percentage of Viking Organic Black Malt in malt bill the changes in taste can be found quickly. Dosage rates more than 10% are rare.

MALT SPECIFICATION

| | | |
|--------------|------|-----------|
| MOISTURE | % | max. 5.0 |
| EXTRACT FINE | % dm | min. 65.0 |
| COLOR | °EBC | 1300–1500 |

PRODUCTION:



Finland



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION





SMOKED SPECIAL

VIKING SMOKED WHEAT MALT



MALT CHARACTER

Viking Smoked Wheat Malt is produced by using the oak from the unique, natural areas located in the north-east of Poland. These are called “Polish Green Lungs”. Smoke from oak gives the malt specific and delicate aroma. Due to relatively low processing temperatures, enzymatic activities and other good brewing properties are maintained.

APPLICATIONS

In the brewing **Viking Smoked Wheat Malt** can be used for beer called “grodziskie” and other special beers. Smoked Malt can be also used in bakeries as a spice.

MALT SPECIFICATION

| | | |
|---------------|------|-----------|
| MOISTURE | % | max. 9.0 |
| EXTRACT FINE | % dm | min. 81.0 |
| COLOR | °EBC | max. 10 |
| PROTEIN | % dm | max. 13.5 |
| TOTAL PHENOLS | ppm | 5.0–10.0 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION



VIKING SMOKED MALT

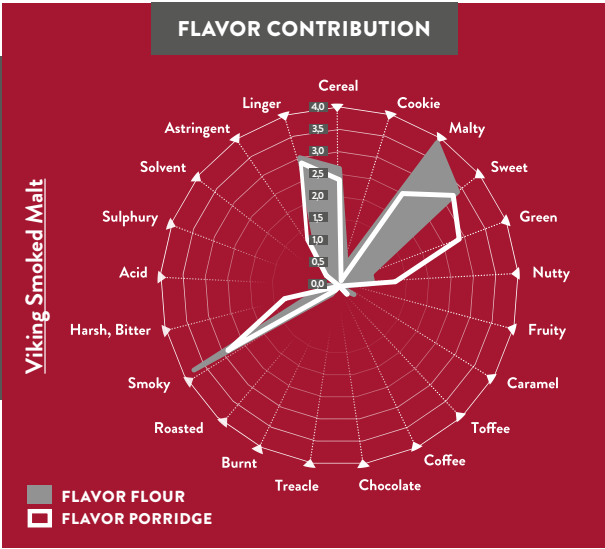


MALT CHARACTER

Viking Smoked Malts are produced from 2-row spring malting barley, null-LOX variety. The flavors of these malts are as with pilsner malt with rather strong smoky flavor depending on type of wood used for smoking. We can use apple, beech, cherry, sweet cherry and pear wood delivered from ecological, clean areas. Due to relatively low processing temperatures, enzymatic activities and other good brewing properties are maintained.

APPLICATIONS

In the brewing Viking Smoked Malts can be considered as pilsner malt with a special aroma as smoked malts flavor and taste profile is not too overwhelming. Smoked Malts can be also used in bakeries as a spice.



MALT SPECIFICATION

| | | |
|---------------|------|-----------|
| MOISTURE | % | max. 9.0 |
| EXTRACT FINE | % dm | min. 81.0 |
| COLOR | °EBC | max. 10 |
| PROTEIN | % dm | max. 12.0 |
| TOTAL PHENOLS | ppm | 5.0-10.0 |

PRODUCTION:



PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING LIGHTLY PEATED MALT



MALT CHARACTER

The flavor of this malt is as with pilsner malt with hue of peat and smoke. Varieties suitable for peat-curing process are used. Due to relatively low processing temperatures, enzymatic activities and other good brewing properties are maintained.

APPLICATIONS

Viking Lightly Peated Malt can be used in distilleries in whisky production. In the brewing process, as Lightly Peated Malts flavor and taste profile is not too overwhelming, it can be considered as pilsner malt with a special aroma. Viking Lightly Peated Malt can be also used in bakeries as a spice.

MALT SPECIFICATION

| | | |
|---------------|------|-----------|
| MOISTURE | % | max. 9.0 |
| EXTRACT FINE | % dm | min. 81.0 |
| COLOR | °EBC | max. 10 |
| PROTEIN | % dm | max. 12.0 |
| TOTAL PHENOLS | ppm | 3.0–10.0 |

PRODUCTION:



Poland

PACKAGING:



Bags



Big bags



Containers



Bulk

FLAVOR CONTRIBUTION





DISTILLER'S CHOICE

VIKING ENZYME MALT



MALT CHARACTER

Viking Enzyme Malt is produced either from 2-row or 6-row spring barley. The steeping and germination conditions are chosen to promote enzyme release and synthesis. The kilning program is designed to preserve enzyme activity as possible.

APPLICATIONS

Viking Enzyme Malt is recommended to use when high portion of adjuncts is used in a brewing process. It is also suitable for production of quality grain whisky and pure alcohol. It can be also used for adjusting the Falling Number of baking flour. In order to optimize ethanol yield Enzyme Malt can be delivered as blends of varieties with different enzyme spectra.

DID YOU KNOW ?

The Scotch whisky manufacturing tradition requires to dry germinated barley grains smoking them in peat smoke – thus obtaining the malt.

MALT SPECIFICATION

| | | |
|-----------------|-------|-----------|
| MOISTURE | % | max. 7.0 |
| EXTRACT FINE | % dm | min. 76.0 |
| DIASTATIC POWER | WK dm | min. 620 |
| ALFA-AMYLASE DU | dm | min. 70 |

PRODUCTION:



Finland

PACKAGING:



Bags



Big bags



Containers



Bulk

VIKING POT STILL RYE MALT

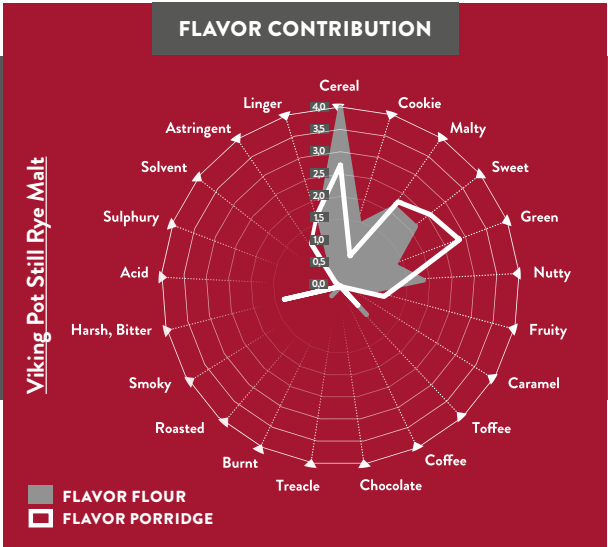


MALT CHARACTER

Viking Pot Still Rye Malt has gone through a special steeping, germination and kilning programs to promote high enzyme activity to support good behavior during pot still process.

APPLICATIONS

Designed for rye pot still whisky process but may also be used in beer manufacturing.



MALT SPECIFICATION

| | | |
|-----------------|-------|-----------|
| MOISTURE | % | max. 7.0 |
| EXTRACT FINE | % dm | min. 83.5 |
| DIASTATIC POWER | WK dm | min. 300 |
| ALFA-AMYLASE DU | dm | min. 30 |
| GN | g/t | < 0.5 |

PRODUCTION:



Finland

PACKAGING:



Bags



Big bags



Containers



Bulk

MALT RANGE SUMMARY

| PRODUCT | Moisture | Extract | Color | Diastatic Power | Recommended dosage rate (%) |
|---|----------|---------|-----------|-----------------|-----------------------------|
| BREWER'S CLASSIC, typical values | | | | | |
| VIKING PILSNER MALT | 5,0 | 80,0 | 3,3-4,3 | high | up to 100 |
| VIKING PALE ALE MALT | 5,0 | 80,0 | 4-7 | high | up to 100 |
| VIKING PILSNER ZERO MALT | 5,0 | 80,0 | 3-4,3 | high | up to 100 |
| VIKING VIENNA MALT | 5,0 | 79,0 | 7-10 | high | up to 100 |
| VIKING WHEAT MALT | 6,0 | 82,0 | 3,5-6,5 | high | up to 60 |
| BREWER'S SPECIAL, typical values | | | | | |
| NEW! VIKING CARABODY MALT | 7,0 | 75,0 | max. 8 | low | up to 10 |
| NEW! VIKING OAT MALT | 7,0 | 60,0 | 3,5-7 | negligible | up to 20 (30) |
| VIKING RED ACTIVE MALT | 4,5 | 79,0 | 30-40 | high | up to 100 |
| VIKING RED ALE MALT | 5,0 | 75,0 | 60-80 | negligible | up to 20 |
| VIKING MUNICH LIGHT MALT | 5,0 | 78,0 | 14-18 | low | up to 25 |
| VIKING MUNICH DARK MALT | 5,0 | 78,0 | 20-24 | low | up to 20 |
| VIKING CHOCOLATE LIGHT MALT | 5,0 | 68,0 | 350-450 | none | up to 10 |
| VIKING CHOCOLATE DARK MALT | 5,0 | 67,0 | 800-1000 | none | up to 5 |
| VIKING CARAMEL 30 MALT | 7,0 | 75,0 | 25-35 | negligible | up to 25 |
| VIKING CARAMEL 50 MALT | 6,0 | 75,0 | 40-60 | none | up to 25 |
| VIKING CARAMEL 100 MALT | 6,0 | 75,0 | 90-110 | none | up to 20 |
| VIKING CARAMEL 150 MALT | 6,0 | 75,0 | 140-160 | none | up to 20 |
| VIKING CARAMEL 200 MALT | 6,0 | 75,0 | 180-220 | none | Up to 15 |
| VIKING CARAMEL 300 MALT | 6,0 | 73,0 | 270-330 | none | Up to 15 |
| VIKING CARAMEL 400 MALT | 6,0 | 68,0 | 350-450 | none | up to 10 |
| VIKING CARAMEL 600 MALT | 6,0 | 68,0 | 550-650 | none | up to 10 |
| VIKING CARAMEL PALE MALT | 7,5 | 77,0 | 6-10 | negligible | up to 30 |
| VIKING COOKIE MALT | 6,0 | 72,0 | 40-60 | negligible | up to 20 |
| VIKING DEXTRIN MALT | 6,5 | 79,0 | 10-16 | low | up to 30 |
| VIKING GOLDEN ALE MALT | 5,0 | 80,0 | 9-14 | low | up to 50 |
| VIKING RYE MALT | 6,0 | 81,0 | 4-10 | high | up to 7 |
| VIKING BLACK MALT | 5,0 | 65,0 | 1300-1500 | none | up to 5 |
| VIKING PEARLED BLACK MALT | 5,0 | 65,0 | 800-1000 | none | up to 5 |
| VIKING ROASTED BARLEY | 5,0 | 71,0 | 900-1200 | none | up to 5 |
| BREWER'S ORGANIC, typical values | | | | | |
| VIKING PILSNER MALT ORGANIC | 5,0 | 79,0 | 3-5 | high | up to 100 |
| VIKING PALE ALE MALT ORGANIC | 5,0 | 78,0 | 4-7 | high | up to 100 |
| VIKING MUNICH LIGHT ORGANIC | 5,0 | 78,0 | 14-20 | low | up to 25 |
| VIKING CARAMEL MALT 100 ORGANIC | 6,0 | 75,0 | 90-110 | none | up to 20 |
| VIKING BLACK MALT ORGANIC | 5,0 | 65,0 | 1300-1500 | none | up to 5 |
| SMOKED SPECIAL, typical values | | | | | |
| VIKING SMOKED WHEAT MALT | 9,0 | 81,0 | 10 | high | up to 30 |
| VIKING SMOKED MALT | 9,0 | 81,0 | 10 | high | up to 30 |
| VIKING LIGHTLY PEATED MALT | 9,0 | 81,0 | 10 | high | up to 50 |
| DISTILLER'S CHOICE, typical values | | | | | |
| VIKING POT STILL RYE MALT | 7,0 | 83,5 | 10 | high | up to 100 |
| VIKING ENZYME MALT | 7,0 | 76,0 | 6 | very high | up to 100 |

VIKING MALT QUALITY

GENERAL REMARKS



ISO 9001
ISO 22000
FSSC 22000
ISO 14001

Our malts are produced according to ISO 9001, ISO 22000 or FSSC 22000 and ISO 14001.



Organic, Kosher and other specific certificates are granted locally.



No GMO raw materials are used.



All the used barley varieties are tested and approved for malting and brewing.



Analysis of our malts are carried out according to EBC Analytica (or similar) when possible.



Product descriptions are subjects to crop changes.

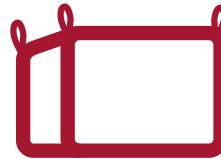
MALT **PACKAGING** SOLUTIONS



Bags



Big bags



Container
liner bags



Bulk

MALT **DELIVERY** SOLUTIONS



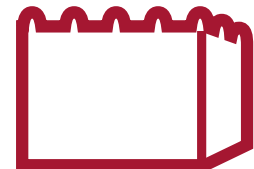
Pallets



Tipper



Silo truck



Container

STORAGE OF BAGGED MALT

Bagged malts should be stored in a cool ($< 20^{\circ}\text{C}$), dry ($< 40 \text{ RH } \%$), odorless and pest free place. Under these conditions, unopened bags of malt can be stored for a minimum **2 years from the date of bagging** and unopened bags of crushed malt for a minimum **1 year from the date of bagging**.



Opened bags are beyond Viking Malt's control, and we always recommend that opened bags are used at once. Anyhow, if opened bags are carefully re-sealed and then stored under the recommended conditions, they are expected to endure the storage times mentioned above.



You should always keep the malts away from hot surfaces. Do not inhale the malt dust.