Technical Data Sheet

ISOMERIZED KETTLE EXTRACT (IKE)

OVERVIEW

- Isomerized Kettle Extract (IKE) is produced from CO_2 Extract of bitter hops.
- It contains isomerized alpha acids ("iso-alpha acids"), beta acids and hop oils.
- The extract is added (early or late) to the kettle to fully or partially replace leaf hops, pellets or other extracts.
- It provides a comparable sensory profile to common CO_2 extract while improving utilization of iso-alpha acids up to 50%, thus offering significant cost saving opportunities.

PROPERTIES & SPECIFICATIONS

- **Appearance:** thick syrup with golden/amber color which becomes more fluid when warmed.
- **Iso-alpha acids*:** 40 – 55%
- **Alpha acids*:** < 5%
- **Beta acids*:** 15 – 40%
- **Hop oils*:** 3 – 10%
- **pH:** approx. 2.5 (mildly corrosive, to be handled with care)
- **Viscosity:** approx. 100 mPas @ 45°C
- **Density:** approx. 0.9 - 1.0 g/l @ 20°C
- **Flavor:** aroma and bitterness profile similar to CO2 extract when added early, yet with late addition significantly more hop aroma due to better hop oil retention.
- **Chemical Residues:** heavy metals, nitrates and most agricultural residues are significantly reduced during extraction.
- **Packaging:** tins, buckets or drums

PRODUCT USE**

- **Application**
  IKE from drums or buckets should be pre-warmed to 30°C for better flowability; it can be easily pumped then. Tins do not require pre-warming, they simply need to be punctured or opened and then suspended into the boiling wort which will flush out all the extract into the kettle.
- **Utilization**
  Depending on process conditions, IKE should lead to 45-55% iso-alpha acid utilization with early kettle addition. Later additions will increase the aroma in final beer, similarly to the use of pellets, due to higher hop oil retention.
- **Dosage**
  Extract addition volumes to wort are typically based on the desired bitter intensity in the beer (IBU). Depending on the brewhouse utilization (usually at least 50% with IKE), bitter substances should be added accordingly.
- **Analytical Methods**
  Iso-alpha, alpha and beta acids are usually measured by HPLC (EBC 7.8 and EBC 7.7) or spectrophotometrically by ASBC Hops-15. Hop oil content can be measured by EBC 7.10 or alternatively by ASBC Hops-13.
- **Storage & Best Before Date**
  Recommended storage is at < 10°C in sealed tins, buckets or drums. If in sealed containers, shelf life is two (2) years. Opened it should be consumed within a few days, preferably stored chilled.

*) depending on hop variety & crop year

**) for safety information, please refer to MSDS