

C13 SUGAR INDUSTRY (polysaccharides, e.g. starch, derivatives thereof C08B; malt C12C) [4]**Note**

Processes using enzymes or micro-organisms in order to:

- (i) liberate, separate or purify a pre-existing compound or composition, or to
 - (ii) treat textiles or clean solid surfaces of materials
- are further classified in subclass C12S. [5]

C13C CUTTING MILLS; SHREDDING KNIVES; PULP PRESSES**1/00 Reducing the size of material from which sugars are to be extracted** (for extraction of starch C08B 30/02)

- 1/02 . Cutting sugar cane
- 1/04 . . Shredding sugar cane

1/06 . Slicing sugar beet

1/08 . Knives; Adjustment or maintenance thereof

3/00 Pressing water from material from which sugars have been extracted (from starch-extracted material C08B 30/10) [4]

3/02 . between perforated moving belts

C13D PRODUCTION OR PURIFICATION OF SUGAR JUICES**1/00 Production of sugar, i.e. sucrose, juices**

- 1/02 . Expressing juice from sugar cane or similar material, e.g. sorghum saccharatum
- 1/04 . . combined with imbibition
- 1/06 . . Sugar-cane crushers
- 1/08 . Extraction of sugar from sugar beet with water
- 1/10 . . continuous processes
- 1/12 . . Details of extraction apparatus, e.g. arrangements of pipes or valves
- 1/14 . using extracting agents other than water, e.g. alcohol or salt solutions

3/00 Purification of sugar juices (mechanical separation of solids from liquids B01)**Note**

When classifying in this group, classification is also made in group B01D 15/08 insofar as subject matter of general interest relating to chromatography is concerned. [8]

- 3/02 . using alkaline earth compounds
- 3/04 . . followed by saturation
- 3/06 . . . with carbon dioxide or sulfur dioxide
- 3/08 . by oxidation or reduction
- 3/10 . . using sulfur dioxide or sulfites
- 3/12 . using adsorption agents, e.g. active carbon
- 3/14 . using ion-exchange materials
- 3/16 . by physical means, e.g. osmosis
- 3/18 . by electrical means

C13F PREPARATION OR PROCESSING OF RAW SUGAR, SUGAR, OR SYRUP**1/00 Thickening, evaporating, or boiling sugar juice** (boiling apparatus B01B; evaporators B01D; centrifuges B04B)

- 1/02 . Crystallisation; Crystallising apparatus
- 1/04 . Separating crystals from mother liquors
- 1/06 . . by centrifugal force
- 1/08 . . Washing residual mother liquor from crystals
- 1/10 . . . in centrifuges
- 1/12 . . Recycling mother liquor or wash liquors
- 1/14 . . Dissolving or refining raw sugar

3/00 Sugar products not otherwise provided for, e.g. powdered, lump, or liquid sugar; Working-up of sugar (C13F 5/00, C13H take precedence; sweetmeats A23G 3/00; foods containing carbohydrate syrups, sugars, sugar alcohols or starch hydrolysates A23L 1/09) [3]

3/02 . formed by moulding sugar

5/00 Drying sugar (storing sugar B65)**99/00 Subject matter not provided for in other groups of this subclass** [8]

C13G EVAPORATION APPARATUS; BOILING PANS**1/00 Evaporators or boiling pans adapted to be specially applicable for sugar solutions**

- 1/02 . Heating equipment
- 1/04 . Other details, e.g. for preventing foaming for catching juice
- 1/06 . combined with measuring instruments for effecting control of the process

C13H CUTTING MACHINES FOR SUGAR; COMBINED CUTTING, SORTING AND PACKING MACHINES FOR SUGAR**1/00 Combined cutting, sorting and packing machines for sugar****3/00 Cutting machines for sugar****C13J EXTRACTION OF SUGAR FROM MOLASSES****1/00 Production of sucrose from final molasses**

- 1/02 . by chemical means

- 1/04 . . by precipitation as alkaline earth metal saccharates

- 1/06 . . using ion exchange

- 1/08 . by physical means, e.g. osmosis

C13K GLUCOSE; INVERT SUGAR; LACTOSE; MALTOS; SYNTHESIS OF SUGARS BY HYDROLYSIS OF DI- OR POLYSACCHARIDES (carbohydrate syrups in foods or foodstuffs A23L 1/09; chemical synthesis other than by hydrolysis of di- or polysaccharides C07H; fermentation or enzyme-using processes C12P 19/00)**1/00 Glucose** (separation from invert sugar C13K 3/00); **Glucose-containing syrups [2]**

- 1/02 . by saccharification of cellulosic materials (manufacture of fodder A23K 1/12)
- 1/04 . . Purifying
- 1/06 . by saccharification of starch or raw materials containing starch
- 1/08 . . Purifying
- 1/10 . Crystallisation

3/00 Invert sugar; Separation of glucose or fructose from invert sugar**5/00 Lactose****7/00 Maltose****11/00 Fructose** (separation from invert sugar C13K 3/00) [2]**13/00 Sugars not otherwise provided for in this class [2]**