

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) | 1/06 | • Slicing sugar beet |
| 1/02 | • Cutting sugar cane | 1/08 | • Knives; Adjustment or maintenance thereof |
| 1/04 | • • Shredding sugar cane | 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 | Note | |
| 1/02 | • Expressing juice from sugar cane or similar material, e.g. sorghum saccharatum | | 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] |
| 1/04 | • • combined with imbibition | | |
| 1/06 | • • Sugar-cane crushers | | |
| 1/08 | • Extraction of sugar from sugar beet with water | | |
| 1/10 | • • continuous processes | 3/02 | • using alkaline earth compounds |
| 1/12 | • • Details of extraction apparatus, e.g. arrangements of pipes or valves | 3/04 | • • followed by saturation |
| 1/14 | • using extracting agents other than water, e.g. alcohol or salt solutions | 3/06 | • • • with carbon dioxide or sulfur dioxide |
| | | 3/08 | • by oxidation or reduction |
| | | 3/10 | • • using sulfur dioxide or sulfites |
| 3/00 | Purification of sugar juices (mechanical separation of solids from liquids B01) | 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) | 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] |
| 1/02 | • Crystallisation; Crystallising apparatus | 3/02 | • formed by moulding sugar |
| 1/04 | • Separating crystals from mother liquors | | |
| 1/06 | • • by centrifugal force | | |
| 1/08 | • • Washing residual mother liquor from crystals | 5/00 | Drying sugar (storing sugar B65) |
| 1/10 | • • • in centrifuges | | |
| 1/12 | • • Recycling mother liquor or wash liquors | 99/00 | Subject matter not provided for in other groups of this subclass [8] |
| 1/14 | • • Dissolving or refining raw sugar | | |

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; MALTOSE; 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]**