

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]**