

SECTION B – PERFORMING OPERATIONS; TRANSPORTING

B01 PHYSICAL OR CHEMICAL PROCESSES OR APPARATUS IN GENERAL (furnaces, kilns, ovens, retorts, in general F27)

B01F MIXING, E.G. DISSOLVING, EMULSIFYING, DISPERSING (mixing paints B44D 3/06)

In this subclass, the following term or expression is used with the meaning indicated:

– “mixing” covers stirring of a single material. [2]

DISSOLVING	1/00	with rotary action.....	7/00, 9/00
MIXING, DISPERSING, EMULSIFYING		other mixers	11/00, 13/00
Processes	3/00	accessories	15/00
Apparatus		EMULSIFYING OR DISPERSING AGENTS	17/00
flow mixers	5/00		

- 1/00 Dissolving** (separating by dissolving B01D; dissolving to effect cooling F25D 5/00) [2]
- 3/00 Mixing, e.g. dispersing, emulsifying, according to the phases to be mixed**
- 3/02 . gases with gases or vapours
 - 3/04 . gases or vapours with liquids (mixing non-alcoholic beverages with gases A23L 2/54)
 - 3/06 . gases or vapours with solids
 - 3/08 . liquids with liquids; Emulsifying
 - 3/10 . . Mixing very viscous liquids
 - 3/12 . liquids with solids (displacing one liquid by another in dispersions of solids in liquids B01D 12/00)
 - 3/14 . . Mixing very viscous liquids with solids
 - 3/18 . solid with solids
 - 3/20 . Pretreatment of the materials to be mixed
 - 3/22 . Aftertreatment of the mixture

Mixers

- 5/00 Flow mixers** (sprayers, atomisers B05B); **Mixers for falling materials, e.g. solid particles** (B01F 13/04 takes precedence; centrifugal mixers B04)
- 5/02 . Jet mixers
 - 5/04 . Injector mixers
 - 5/06 . Mixers in which the components are pressed together through slits, orifices, or screens (turbo-mixers B01F 5/16; colloid-mills B02C; mixing valves F16K 11/00)
 - 5/08 . . Homogenising or emulsifying nozzles
 - 5/10 . Circulation mixers
 - 5/12 . Pump mixers
 - 5/14 . . of the gear type
 - 5/16 . . Turbo-mixers
 - 5/18 . Spray-mixers
 - 5/20 . . with nozzles
 - 5/22 . . with rotary discs
 - 5/24 . Falling particle mixers with repeated action
 - 5/26 . Falling particle mixers with moving means, e.g. stirrers for increasing the mixing

- 7/00 Mixers with rotary stirring devices in fixed receptacles; Kneaders** (B01F 13/04 takes precedence)
- 7/02 . with stirrers rotating about a horizontal or inclined axis
 - 7/04 . . with paddles or arms
 - 7/06 . . with propellers
 - 7/08 . . with helices
 - 7/10 . . with rotary discs
 - 7/12 . . with cylinders
 - 7/14 . . with stirrers having planetary motion
 - 7/16 . with stirrers rotating about a vertical axis
 - 7/18 . . with paddles or arms
 - 7/20 . . . with fixed axis
 - 7/22 . . with propellers
 - 7/24 . . with helices
 - 7/26 . . with rotary discs
 - 7/28 . . with cylinders
 - 7/30 . . with stirrers having planetary motion
 - 7/32 . . with openwork frames or cages

- 9/00 Mixers with rotating receptacles** (B01F 13/04 takes precedence)
- 9/02 . rotating about a horizontal or inclined axis, e.g. drum mixers
 - 9/04 . . without bars
 - 9/06 . . with fixed bars
 - 9/08 . . with rotating stirring devices
 - 9/10 . rotating about a vertical axis
 - 9/12 . . with paddles or arms
 - 9/14 . . with propellers
 - 9/16 . . with helices
 - 9/18 . . with rotary discs
 - 9/20 . . with cylinders
 - 9/22 . with stirrers having planetary motion

- 11/00 Mixers with shaking, oscillating, or vibrating mechanisms** (B01F 13/04 takes precedence)
- 11/02 . Mixing by means of ultrasonic vibrations
 - 11/04 . with pendulum stirrers

B01F

13/00 Other mixers; Mixing plant, including combinations of dissimilar mixers

- 13/02 . Mixers with gas agitation, e.g. with air supply tubes
- 13/04 . Mixers combined with safety devices
- 13/06 . Mixers adapted for working at sub- or super-atmospheric pressure
- 13/08 . Magnetic mixers
- 13/10 . Mixing plant, including combinations of dissimilar mixers

15/00 Accessories for mixers

- 15/02 . Feed or discharge mechanisms
- 15/04 . Forming a predetermined ratio of the substances to be mixed (controlling ratio of two or more flows of fluid or fluent material G05D 11/02)
- 15/06 . Heating or cooling systems

17/00 Use of substances as emulsifying, wetting, dispersing, or foam-producing agents (flotation agents B03D 1/001; used for particular applications, see the relevant classes, e.g. use of substances as detergents C11D) [3,5]

- 17/02 . Alkyl sulfonates or sulfuric acid ester salts derived from monohydric alcohols
- 17/04 . Sulfonates or sulfuric acid ester salts derived from polyhydric alcohols or amino alcohols or derivatives thereof (sulfated or sulfonated fatty oils B01F 17/08)
- 17/06 . Esters of higher fatty acids with hydroxyalkylated sulfonic acids or salts thereof
- 17/08 . Sulfation or sulfonation products of fats, oils, waxes, or higher fatty acids or esters thereof with monovalent alcohols

- 17/10 . Derivatives of low-molecular-weight sulfocarboxylic acids or sulfopolycarboxylic acids
- 17/12 . Sulfonates of aromatic or alkylated aromatic compounds
- 17/14 . Derivatives of phosphoric acid
- 17/16 . Amines or polyamines
- 17/18 . Quaternary ammonium compounds
- 17/20 . Phosphonium and sulfonium compounds
- 17/22 . Amides or hydrazides
- 17/24 . . Amides of higher fatty acids with aminoalkylated sulfonic acids
- 17/26 . Sulfonamides
- 17/28 . Aminocarboxylic acids (protein hydrolysates B01F 17/30)
- 17/30 . Proteins; Protein hydrolysates
- 17/32 . Heterocyclic compounds
- 17/34 . Higher-molecular-weight carboxylic acid esters (B01F 17/06 takes precedence)
- 17/36 . . Esters of polycarboxylic acids
- 17/38 . Alcohols, e.g. oxidation products of paraffins
- 17/40 . Phenols
- 17/42 . Ethers, e.g. polyglycol ethers of alcohols or phenols
- 17/44 . . Ether carboxylic acids
- 17/46 . . Ethers of aminoalcohols
- 17/48 . . Cellulose ethers
- 17/50 . Derivatives of lignin
- 17/52 . Natural or synthetic resins or their salts
- 17/54 . Silicon compounds
- 17/56 . Glucosides; Mucilage; Saponines