

SECTION B — PERFORMING OPERATIONS; TRANSPORTING

B01 PHYSICAL OR CHEMICAL PROCESSES OR APPARATUS IN GENERAL

B01F MIXING, e.g. DISSOLVING, EMULSIFYING, DISPERSING (mixing paints B44D 3/06)

Note(s)

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

- "mixing" covers stirring of a single material.

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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

B01F

9/06	<ul style="list-style-type: none">• with fixed bars	17/02	<ul style="list-style-type: none">• Alkyl sulfonates or sulfuric acid ester salts derived from monohydric alcohols
9/08	<ul style="list-style-type: none">• with rotating stirring devices	17/04	<ul style="list-style-type: none">• Sulfonates or sulfuric acid ester salts derived from polyhydric alcohols or amino alcohols or derivatives thereof (sulfated or sulfonated fatty oils B01F 17/08)
9/10	<ul style="list-style-type: none">• rotating about a vertical axis	17/06	<ul style="list-style-type: none">• Esters of higher fatty acids with hydroxyalkylated sulfonic acids or salts thereof
9/12	<ul style="list-style-type: none">• with paddles or arms	17/08	<ul style="list-style-type: none">• Sulfation or sulfonation products of fats, oils, waxes, or higher fatty acids or esters thereof with monovalent alcohols
9/14	<ul style="list-style-type: none">• with propellers	17/10	<ul style="list-style-type: none">• Derivatives of low-molecular-weight sulfocarboxylic acids or sulfopolycarboxylic acids
9/16	<ul style="list-style-type: none">• with helices	17/12	<ul style="list-style-type: none">• Sulfonates of aromatic or alkylated aromatic compounds
9/18	<ul style="list-style-type: none">• with rotary discs	17/14	<ul style="list-style-type: none">• Derivatives of phosphoric acid
9/20	<ul style="list-style-type: none">• with cylinders	17/16	<ul style="list-style-type: none">• Amines or polyamines
9/22	<ul style="list-style-type: none">• with stirrers having planetary motion	17/18	<ul style="list-style-type: none">• Quaternary ammonium compounds
11/00	Mixers with shaking, oscillating, or vibrating mechanisms (B01F 13/04 takes precedence)	17/20	<ul style="list-style-type: none">• Phosphonium and sulfonium compounds
11/02	<ul style="list-style-type: none">• Mixing by means of ultrasonic vibrations	17/22	<ul style="list-style-type: none">• Amides or hydrazides
11/04	<ul style="list-style-type: none">• with pendulum stirrers	17/24	<ul style="list-style-type: none">• Amides of higher fatty acids with aminoalkylated sulfonic acids
13/00	Other mixers; Mixing plant, including combinations of dissimilar mixers	17/26	<ul style="list-style-type: none">• Sulfonamides
13/02	<ul style="list-style-type: none">• Mixers with gas agitation, e.g. with air supply tubes	17/28	<ul style="list-style-type: none">• Aminocarboxylic acids (protein hydrolysates B01F 17/30)
13/04	<ul style="list-style-type: none">• Mixers combined with safety devices	17/30	<ul style="list-style-type: none">• Proteins; Protein hydrolysates
13/06	<ul style="list-style-type: none">• Mixers adapted for working at sub- or super-atmospheric pressure	17/32	<ul style="list-style-type: none">• Heterocyclic compounds
13/08	<ul style="list-style-type: none">• Magnetic mixers	17/34	<ul style="list-style-type: none">• Higher-molecular-weight carboxylic acid esters (B01F 17/06 takes precedence)
13/10	<ul style="list-style-type: none">• Mixing plant, including combinations of dissimilar mixers	17/36	<ul style="list-style-type: none">• Esters of polycarboxylic acids
15/00	Accessories for mixers	17/38	<ul style="list-style-type: none">• Alcohols, e.g. oxidation products of paraffins
15/02	<ul style="list-style-type: none">• Feed or discharge mechanisms	17/40	<ul style="list-style-type: none">• Phenols
15/04	<ul style="list-style-type: none">• 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)	17/42	<ul style="list-style-type: none">• Ethers, e.g. polyglycol ethers of alcohols or phenols
15/06	<ul style="list-style-type: none">• Heating or cooling systems	17/44	<ul style="list-style-type: none">• Ether carboxylic acids
<hr/>		17/46	<ul style="list-style-type: none">• Ethers of aminoalcohols
17/00	Use of substances as emulsifying, wetting, dispersing, or foam-producing agents (flotation agents B03D 1/001; used for particular applications, <u>see</u> the relevant classes, e.g. use of substances as detergents C11D) [3, 5]	17/48	<ul style="list-style-type: none">• Cellulose ethers
		17/50	<ul style="list-style-type: none">• Derivatives of lignin
		17/52	<ul style="list-style-type: none">• Natural or synthetic resins or their salts
		17/54	<ul style="list-style-type: none">• Silicon compounds
		17/56	<ul style="list-style-type: none">• Glucosides; Mucilage; Saponines