

Tested Raw Materials

NATEX Prozesstechnologie GesmbH

| Raw material | Extraction conditions | | Yield (%) | Remarks |
|------------------------------------|-----------------------|--------|-----------|--|
| | bar | °C | | |
| Aerogel | 80-200 | 20-120 | | drying (EU project No. 505888-1) |
| Alcoholic beverages | 90-150 | 15-40 | 10-12 | low(non)-alcoholic beverages, patent for the reduction of the alcohol content of alcoholic beverages |
| Algae | 300-750 | 40-85 | up to 40 | extraction of β -carotene, astaxanthin, oil (for biodiesel) |
| Alkanna tinctoria | 100-300 | 40-80 | 6,2 | extraction of naphthoquinone |
| Amaranth | 150-500 | 40-75 | 9 | oil, squalene |
| Angelica sinensis | 250-500 | 65-80 | 4-5 | TCM-phytosterols, ferulate, flavonoides |
| Animal body flour (after pressing) | 250-300 | 40-65 | 9-12 | white animal fat |
| Animal carcasses, steril | 250-300 | 40-65 | 35-40 | white animal fat |
| Anise seed | 150-300 | 20-40 | 8-10 | total extract, clear brownish oil, volatile oil, anetole |
| Annato seed | 150-500 | 45-85 | 3,5 | total extract, bixin, norbixin |
| Aquilaria agallocha | 100-280 | 40-80 | 0,5-1,2 | wood oil for perfumes |
| Aquilaria roots | 100-350 | 40-65 | 3,5 | perfume oil |
| Argan nuts | 520-700 | 50-60 | 20 | oil |
| Arnica | 150-300 | 20-60 | 5-6 | brownish, waxy total extract |
| Artemisia (various species) | 90-700 | 40-65 | 1,2 | pharma purpose, e.g. malaria treatment |
| Backhousia citriadora | 150-450 | 50-70 | 2,3 | volatile oil, repellent |
| BAK-KUT-TEH | 100-450 | 65-70 | 10 | spice-mix |
| Barley bran | 100-500 | 45-75 | 2,5 | defatting, tocopherols, tocotrienols |
| Barley germ | 100-500 | 45-75 | 3 | extraction of tocopherols and tocotrienols |
| Barley milled | 100-500 | 45-75 | 1,5 | defatting, tocopherols, tocotrienols |
| Beer | 80-120 | 15-40 | | aroma, patent for the reduction of the alcohol content of alcoholic beverages |
| Blood powder | 400-600 | 40-85 | 13-15 | defatting, hemin, fibrin glue |
| Bones, raw | 120-450 | 35-40 | | defatting, removal of solvents, impregnation with collagen |
| Borage seed | 150-500 | 40-75 | 18 | oil, gamma-linolenic acid |
| Butter fat | 100-500 | 40-75 | | fractionation acc. melting-point, cholesterol reduction |
| Butterbur | 70-150 | 20-40 | 2 | pharma extract |
| Camomile | 250-750 | 20-40 | 3-6 | dark brown, waxy extract, volatile oil, matricine |
| Camomile, yellow | 500-700 | 65-70 | 1,2 | extraction of colour |
| Caraway seed Source: Austria | 150-700 | 20-60 | 7-12 | total extract, clear brownish oil, volatile oil, carvone |
| Caraway seed Source: Egypt | 150-700 | 30-65 | 4-18 | volatile oil, spice oil |
| Cardamom Source: Caribbean | 340-500 | 40-75 | 3-6 | perfume oil, spice oil |
| Cardamom Source: India | 250-500 | 40-60 | 4-5,5 | total extract (volatile oil 45-55 ml/100 g), dark green, low viscous oil |
| Celandine root, coarsely milled | 450-700 | 60-65 | 1,2 | pharmaceutical extract |
| Celery root | 150-450 | 20-60 | 10 | total extract, golden brown, mobile oil, (volatile oil 10-15 ml/100 g) |
| Cellulose fibers | 120-500 | 50-80 | | expansion of fibres, impregnation |

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| Cellulose membranes, fibres | 100-300 | 40-80 | | removal of solvents |
| Champignons | 300-350 | 55-65 | 0,5-1,5 | mushroom aroma |
| Champignons | 150-300 | 40-65 | | extraction of carbendazim (fungicide) |
| Chili | 250-700 | 50-85 | 3-12 | extraction of capsaicin, capsicum colour |
| Chili | 400-500 | 50-70 | 3-12 | total extract, colour concentration up to 200.000 CU or 10 % capsaicin concentration |
| Chocolate | 100-200 | 45-65 | 40-60 | extraction of aroma and fat |
| Chrysanthemum | 250-450 | 40-60 | 2-3 | total extract |
| Chrysanthemum pasthenium | 250-260 | 60-70 | 3,4 | cosmetic ingredients |
| Cinnamon bark | 150-350 | 20-50 | 3 | total extract (volatile oil 60-75 ml/100 g) |
| Cinnamon leaves | 150-250 | 20-40 | 3-4 | total extract, volatile oil |
| Clove bud | 150-350 | 20-60 | 16-22 | brownish, slightly viscous total extract (volatile oil 75-85 ml/100 g) |
| Clover, red | 300-500 | 40-60 | | polyphenols, anti-solvent process |
| Cocoa husks | 250-300 | 60-90 | 1,5 | theobromine |
| Cocoa polyphenols | 100-700 | 45-80 | 1,2 | extraction of theobromine |
| Cocoa powder | 350-500 | 40-100 | 10-40 | cocoa butter and low fat powder, yellowish extract |
| Cocoa press cake | 250-700 | 45-85 | 10 | extraction of fat |
| Coconut flakes | 350-500 | 50-70 | 55-62 | defatting |
| Coconut, green | 250-850 | 45-85 | 1-2 | aroma extraction |
| Cod roe powder | 150-460 | 40-60 | 5-7 | defatting, lecithine |
| Coffee roasted | 135-450 | 70-80 | 8-14 | aroma extraction, coffee oil |
| Coffee, green beans, Arabica | 220-320 | 60-90 | 0,8-2,5 | decaffeination |
| Coffee, green beans, Robusta | 220-450 | 60-110 | 1-3 | decaffeination |
| Collagen membranes | 150-450 | 40-65 | | extraction of solvents, deffating |
| Coriander | 150-850 | 40-65 | 8-15 | total extract (volatile oil 6-15 ml/100 g), linallol 65-70 %, brownish mobile oil |
| Cork granulate | 70-300 | 30-80 | | removal of TCA |
| Cork whole plates | 70-300 | 30-80 | | removal of TCA |
| Curcuma | 400-500 | 20-80 | 4,5 | extraction of colour |
| Currant seed, red and black | 250-300 | 20-40 | 14-18 | oil, gamma linolenic acid, multiple unsaturated fatty acids |
| Dill seed | 500-700 | 20-60 | 10 | total extract, solid at room temperature |
| Dill, fresh | 500-700 | 20-60 | 1,5-2 | spice oil |
| Earthalmond | 240-700 | 40-60 | 18-33 | total extract, clear yellowish oil |
| Echinacea purpurea | 300-500 | 40-60 | | polyphenols, anti-solvent process |
| Egg yolk powder | 200-460 | 20-60 | 30-45 | defatting, yellowish fat, triglycerides, cholesterol |
| Elder blossom, dry | 300-450 | 43-65 | 1,2 | extraction of odor |
| Elder blossom, fresh | 70-450 | 10-40 | | total extract, aroma |
| Elderberry | 70-250 | 10-40 | 0,2-0,7 | total extract |
| Eucalyptus | 150-250 | 20-40 | 1,8-3 | total extract, high yield of volatile oil |
| Evening primrose seed | 300-700 | 40-65 | 22 | light yellow, mobile oil, gamma linolenic acid 8-12 % |
| Fennel | 150-300 | 20-40 | 10 | clear brownish oil (volatile oil 20-35 ml/100 g), fenchone |
| Fir and spruce needles | 100-500 | 40-75 | 5-7 | total extract, antioxidants and aroma |
| Fish oil | 200-700 | 40-80 | 2-5 | removal of odor |
| Flax seed press cake | 100-500 | 45-70 | 12 | deoiling |
| Garlic, dry | 150-450 | 60-85 | 1-3 | spice oil |
| Garlic, fresh | 100-450 | 20-50 | 0,3-0,5 | aqueous, total extract |
| Giant knot weed | 250-600 | 55-65 | 2 | resveratrol |

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| Ginger | 150-480 | 50-70 | 3-6 | total extract (gingerols ~22 %, volatile oil 30-35 ml/100 g), brownish, viscous, clear oil |
| Ginseng | 150-450 | 50-70 | | pesticide reduction (>95 %) |
| Glass spheres, glass fibres | 100-300 | 40-80 | | |
| Golden balm flower | 150-250 | 20-40 | 1,5 | total extract, yellowish green (no red pigment) |
| Grape pomace | 200-450 | 65-80 | | extraction of polyphenols (EU project No. 508649), anti-solvent process |
| Green-lipped mussel | 300-500 | 42-45 | 3,5-4,5 | marine oil |
| Guarana | 350-450 | 65-87 | 4-4,5 | caffeine extract |
| Hay | 100-450 | 40-75 | | wax and volatile oil |
| Hay seed | 200-250 | 20-40 | 1,2 | dark brown, waxy total extract |
| Hazelnut milled, paste | 100-500 | 60-65 | 2-5 | aroma extraction |
| Hazelnut powder | 100-500 | 40-75 | 5-10 | defatting, aroma oil |
| Hazelnut roasted, crushed | 100-500 | 60-65 | 50 | defatting |
| Hazelnut whole nut | 100-500 | 60-65 | 50 | defatting |
| Hemp | 150-320 | 60-80 | 28-35 | oil, gamma-linolenic acid |
| Henna red | 150-500 | 40-65 | | defatting |
| Hinoke (Juniperus chinensis) | 150-500 | 40-65 | 3,6 | extraction of volatile oil |
| Hop pellets | 170-300 | 28-40 | 10-25 | hop extract |
| Hop powder | 150-500 | 44-80 | 8-22 | hop extract |
| Hop seed | 300-700 | 40-65 | 6 | oil, gamma-linolenic acid |
| Job's tears, milled | 200-450 | 60-65 | 5 | pharma oil |
| Kachura | 400-500 | 40-60 | 3-7 | spice oil |
| Kava kava root | 350-500 | 55-65 | 3-5 | pharma extract |
| Krill | 300-600 | 50-70 | 10,5 | |
| Ladies thistle seed | 250-300 | 40-65 | 32 | oil, residue for sylimarin production |
| Lanolin, raw | 220-500 | 50-70 | | purification |
| Latex | 100-200 | 70-90 | | extraction of solvent residue |
| Lecithin | 100-700 | 20-80 | 20-40 | deoiling |
| Lotus flowers | 100-460 | 40-70 | 1,8-2 | total waxy extract |
| Lupines | 300-500 | 50-70 | 4,5 | defatting |
| Mace | 250-450 | 50-70 | 5-40 | total extract (volatile oil 10-15 ml/100 g), orange-red, wax-like resin |
| Magnesium swarf | 100-350 | 40-80 | 8-15 | deoiling |
| Marigold | 150-600 | 20-65 | 7-9 | dark red, viscous extract, cosmetic extract, hand cream |
| Marjoram | 150-700 | 20-70 | 1,2 | dark and sticky total extract, aroma |
| Melissa | 100-450 | 40-65 | 0,8-1,5 | aroma |
| Metal swarf | 100-450 | 40-80 | 8-15 | deoiling |
| Mustard | 300-450 | 60-80 | 12-18 | dark yellow, oily total extract, spice oil |
| Nutmeg | 150-500 | 45-80 | 22-40 | total extract (volatile oil 20-35 ml/100 g), beige, wax-like resin |
| Olive oil | 100-500 | 45-75 | | removal of "scratching" taste |
| Olives, paste, whole, without kernels | 150-500 | 60-70 | 22-25 | oil |
| Onion, dry | 100-450 | 20-50 | 5-7 | aqueous, total extract |
| Oolong tea powder | 100-500 | 40-80 | 3 | decaffeination |
| Oregano | 450-750 | 50-80 | 3,5-5 | total extract, antioxidants |
| Palm oil | 120-340 | 50-85 | | beta-carotene, sterols, tocopherols |
| Palm oil distillate | 220-270 | 40-80 | | tocopherols, steroides and vitamins extr. |
| Palmarosa grass | 200-240 | 30-50 | 2,5 | crude extract, volatile oil |
| Paprika extract | 350-400 | 60-80 | | concentration of aroma |
| Paprika oleoresin | 240-300 | 60-80 | | concentration of colour up to 250 000 CU |
| Paprika, organic, white, hot | 260-300 | 50-70 | 7 | extraction of aromatic spice oil |

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| Paprika, red | 120-750 | 40-70 | 6-12 | extraction of colour and aroma |
| Paprika, sweet | 100-700 | 20-80 | 6-15 | total extract, aroma, pigments |
| Parsley seed | 450-500 | 60-70 | 13-18 | total extract, volatile oil, apiole, myristicin |
| Parsley, fresh | 250-400 | 60-65 | 1,2 | aroma |
| Peanut, roasted, milled | 200-700 | 80-85 | 45 | defatting |
| Peanut, roasted, press cake | 200-700 | 80-85 | 12 | defatting |
| Peanut, whole, ground | 150-450 | 40-80 | 45 | yellowish clear mobile oil |
| Peanut, whole, roasted | 200-700 | 80-85 | 45 | defatting |
| Pepper black | 80-250 | 20-40 | 1,2-2,5 | volatile oil |
| Pepper white | 200-500 | 50-80 | 8-12 | spice oil and piperin |
| Peppermint leaves | 150-250 | 20-40 | 2,5-3 | dark, waxy total extract with yellow crystals, volatile oil |
| Perilla, roasted, milled | 100-480 | 45-75 | 41 | omega rich oil |
| Plastics granulate | 120-470 | 50-100 | | removal of odor and monomers from polyethylene, polypropylene, polyurethane, polyester, silicone |
| Poppy seed press cake | 100-500 | 45-65 | 8-12 | defatting |
| Potato chips | 100-500 | 40-86 | 26,2-30 | defatting |
| Propolis | 150-450 | 20-65 | | extraction of polyphenols, anti-solvent process |
| Pumpkin seed | 100-500 | 40-80 | 40 | defatting |
| Pumpkin seed press cake | 250-500 | 40-65 | 12-15 | oil |
| Pyrethrum (flower) Sources: Simbabwe, Kenya, China, Australia, Ecuador | 60-300 | 20-60 | 2-5 | total extract, very thoroughly tested, about 150 tests, recovery 92-96%, pyrethrines content appr. 45% |
| Pyrethrum crude extract | 60-100 | 20-65 | | extract refining to pale extract |
| Rapeseed | 100-450 | 20-80 | 25-40 | oil |
| Rapeseed, presscake | 250-300 | 20-80 | 12-14 | oil |
| Ribwort leaves | 150-250 | 20-40 | 2,2 | dark, waxy total extract |
| Rice | 135-350 | 40-60 | 0,5-1,2 | removal of pesticides and surface fat |
| Rice bran | 250-500 | 40-65 | 16 | defatting |
| Rice flour | 100-450 | 40-80 | 0,6-1,7 | defatting |
| Rice husks | 100-500 | 40-85 | 1,5-2 | defatting |
| Rice, brown | 200-500 | 27-45 | 0,5-1,2 | removal of pesticides, surface fat, longer shelf-life |
| Rose pepper | 100-450 | 40-65 | 6,4 | cosmetic oil |
| Rosehip | 350-450 | 65-70 | 12 | total extract, gamma linolenic acid |
| Rosemary | 130-720 | 25-90 | 7,5-9 | extraction of antioxidants |
| Rosemary | 350-800 | 50-90 | 5-8,5 | total extract (volatile oil 20-24 ml/100 g), antioxidants, dark paste (up to 30 % carnosic acid) |
| Rubber granulate (recycled) | 200-300 | 70-80 | 4-8 | removal of odor and/or impregnation (EU project No. LIFE04 ENV/DK/70) |
| Sage | 450-800 | 50-80 | 5-8,5 | total extract, antioxidants |
| Salmon granulate | 150-460 | 40-65 | 10-15 | defatting |
| Sandalwood, sandalwood powder | 80-500 | 60-80 | 1,5-5,5 | yellow, brownish, viscous oil, fragrance |
| Seabuckthorn | 300-500 | 50-70 | 12 | red oil, gamma linolenic acid |
| Sesame seed, roasted | 250-500 | 40-80 | 42-51 | oil, multiple unsaturated fatty acids, flavor |
| Sesame, heavily roasted | 500-700 | 50-70 | 45-52 | oil |
| Sesame, unroasted | 460-500 | 60-70 | 45-52 | yellow oil |
| Shrimp heads | 150-420 | 40-65 | 8-12 | defatting |
| Silicone oil | 150-400 | 75-85 | 5 | extraction of mono- and oligomers |
| Soya filter cake | 100-500 | 20-65 | 20-40 | extraction of oil, tocopherols, steroides |
| Soya press cake | 300-450 | 40-65 | 11,5 | deoilng |
| Soya SCUM | 100-500 | 20-65 | | extraction of oil, tocopherols, steroides |

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| Soya, green | 150-600 | 20-80 | 20 | extraction of coumaric and ferulic acid |
| Soya, roasted, milled | 150-250 | 20-80 | 2-5 | extraction of aroma |
| St.John's wort | 120-500 | 20-50 | 1,5-2,5 | total extract, hyperforine |
| Sunflower seed | 250-300 | 20-80 | 36 | oil |
| Szechuan lovage | 100-500 | 45-70 | 5,8 | TCM medicine |
| Tea | 250-300 | 45-75 | 2,8-3,8 | decaffeination |
| Tea leaves | 100-300 | 50-60 | 1,5 | aroma |
| Tea, black | 270-350 | 65-75 | 21,8-3,8 | decaffeination |
| Tea, green | 300-500 | 65-75 | 3,5 | decaffeination before polyphenol extraction |
| Thistle press cake | 150-500 | 40-85 | 12 | oil |
| Thyme | 500-750 | 40-80 | 3,6-5,6 | total extract, antioxidants, aroma |
| Tobacco extract | 100-300 | 20-80 | 1,8-2,4 | aroma |
| Tobacco leaves, dust | 100-300 | 20-80 | 2 | total extract, aroma, refining |
| Tomato peels | 400-750 | 60-65 | | extraction of colour and lycopene |
| Turmeric | 300-800 | 60-90 | 4-10 | total extract (5-10 % curcumin), yellow viscous suspension |
| Valerian roots | 150-450 | 20-40 | 1,7-4 | total extract, valepotriate |
| Vanilla beans Source: Madagascar, Indonesia | 100-450 | 20-60 | 3,5-8,5 | yellow, pasty total extract (10-30 % vanillin) |
| Vetiver roots | 250-300 | 40-60 | 2,5 | crude, waxy extract |
| Voacanga seed, milled | 300-700 | 20-65 | 24-27 | extraction of fat and alkaloids |
| Walnut press cake | 300-500 | 45-75 | 8-12 | defatting |
| Wasabi | 200-450 | 60-70 | 3 | spice extract |
| Wheat bran | 220-500 | 55-65 | 1-3 | oil, tocopherols, tocotrienols |
| Wheat protein | 300-500 | 45-55 | 1-2 | defatting |
| Wheat roots and sprouts | 150-500 | 45-70 | 2,2-3,5 | cereal oil with high content of tocotrienols |
| Wine | 80-120 | 15-40 | | aroma, patent for the reduction of the alcohol content of alcoholic beverages |
| Wormwood leaves | 150-250 | 20-40 | 2,7-3,5 | dark, waxy total extract |
| Yarrow leaves | 150-250 | 20-40 | 1,6 | dark brown, waxy total extract |
| Zizyphus spinosa | 600-800 | 45-55 | 13-15 | TCM pharma extract |