

PNEU DILUTE PRESSURE

DILUTE PHASE SIZING CALCULATION

NOTES:

The Friction and Velocity information below is used to size dilute phase systems only. The cells are locked on this sheet for protection against accidental deletion, but there is no password protection so the user can add new data as required.

Product Description	bulk density lb/ft ³		bulk density kg/m ³		Friction Factor	Velocity Factor
	min	max	min	max		
adipic acid	40	45	641	721	2 TO 3	14
alfalfa meal	17		272		2	14
alfalfa seed	47		753		3	16
alfalfa pellets	42		673		3	16
alumina. Fine, granulated	55		881		2	19
ammonium perchlotate	52		833		2	18
baking powder	41		657		2	16
barley	38		609		5	15
barley, malted	31		497		3	13
barley, meal	28		448		3	15
beet pulp, dried	17		272		1	13
borax, fine	75		1201		2	20
bran	16	36	256	577	2	13
buckwheat	41		657		5	16
buckwheat flour	40		641		3	14
buttermilk, dried	30	35	480	561	1	18
cake mix	30	44	480	705	2	19
calcium carbide	62	80	993	1281	1	18
calcium carbonate (limestone)	85		1361		1	20
calcium oxide (lime)	27		432		1	15
carbon black powder	20		320		1	13
carrots, diced, frozen	44		705		2	16
casein, granular	38	43	609	689	3	14
cellulose acetate	10		160		3	12
cement, portland	65	94	1041	1506	2	16
cereal flakes	9	12	144	192	2	11
chalk, 100 mesh	70	75	1121	1201	1	18
chocolate powder	40		641		2	14
citric acid	48	55	769	881	2	16
clay, attapulugus	55		881		2	18
clay, bentonite	50		801		2	18
clay, calcined	30	80	480	1281	2	18
clay, kaolin	48	64	769	1025	2	18
cocoa beans	37		593		3	14
cocoa nibs	35		561		2	14
cocoa powder	30	35	480	561	2	14
coffee, green bean	42		673		5	16
coffee, roasted bean	23		368		3	14
coffee, instant	19		304		2 TO 3	13
coffee, ground	25		400		5	15
copra, lumpy	22		352		3	16
copra cake , lumpy	25	30	400	480	2 TO 3	16
copra cake, ground	40	45	641	721	2 TO 3	16
corn cob, meal	35		561		2	16

corn, cracked	45		721		3	16
corn flakes	12		192		3	12
corn germ	21		336		3	14
corn, grits	42	53	673	849	5	16
corn, ground	35		561		3	15
corn oil cake	25		400		2	16
corn shelled	45		721		5	16
cotton seed, dry, delinted	35		561		3	14
cotton seed, dry, not delinted	18	25	288	400	1	11
cotton seed expeller cake	25		400		2	16
cotton seed flakes	20	25	320	400	2 TO 3	16
cotton seed hulls	12		192		2	13
cotton seed meal	35		561		2	14
cream, powdered	38		609		2	15
farina	45		721		3	16
Felspar, crushed	75	100	1201	1602	2	18
Felspar, pulverized	50	60	801	961	1	18
Fluorspar	82		1313		2	20
fish meal	35	47	561	753	2	16
fish scraps	40	50	641	801	1 TO 2	16
flaxseed	45		721		5	15
flaxseed expeller cake	48	50	769	801	3	16
flaxseed, ground	28		448		3	14
flax, screenings	27		432		3	14
flour	35	48	561	769	3	12
flour biscuit	26		416		2	14
flour , patent	20		320		2	12
flour, spring wheat	30	35	480	561	2	14
flour, winter wheat	34		545		3	12
flourseed expeller cake	48	50	769	801	2 TO 3	16
gelatin, granulated	32		513		2	16
germ oil meal	35	40	561	641	2	16
gluten feed	30	35	480	561	3	16
gluten meal	40	45	641	721	2	16
graham flour	35	40	561	641	2	14
grits	42		673		3	14
gypsum, calcined	55	60	881	961	1	16
gypsum, lumps	82		1313		2	18
gypsum powder	60	80	961	1281	1	18
hay pellets	40	50	641	801	1	16
hominy	40		641		5	14
hominy feed	27		432		3	15
hominy meal	44		705		3	16
hops, spent, dry	35		561		3	14
isophthalic acid	46	64	737	1025	2	17
lactose	48		769		2	16
leather scraps	59		945		1	16
lime, quick	55		881		2	18
limestone, coarse	98		1570		3	18
limestone, ground	59		945		2	18
limestone, pulverized	68	85	1089	1361	1	18
limestone dust	69	75	1105	1201	2	18
linseed oil cake	45	50	721	801	2 TO 3	16
linseed meal	27		432		2 TO 3	16
litharge	85	182	1361	2915	1	20

maize	40	45	641	721	5	16
magnesium sulfate (Epsom salts)	40	52	641	833	2	16
malt, dry ground	22		352		5	14
malt, dry, spent	10		160		3	14
malt dry whole	27	30	432	480	5	14
malt meal	36	40	577	641	3 TO 4	14
malt sprouts	16		256		2 TO 3	12
malt sugar, ground	35		561		3	14
malt sugar, unground	30		480		3	14
manganese dioxide	70	80	1121	1281	2	18
manganese sulfate	70		1121		2	18
meat meal	35		561		1	16
meat scraps, dried	40	45	641	721	2	16
mids	35		561		3	14
milk, dried, flake	6		96		2	12
milk, malted	30	35	480	561	2	16
milk, powdered, whole	35		561		2	14
mill dust	11		176		2	12
mill run feed	15	20	240	320	2 TO 3	14
millet	39		625		3	14
milo	40	45	641	721	3	14
muriate of potash	77		1233		2	19
nitrate of soda	68	85	1089	1361	3	18
oats	27		432		5	12
oat flour	30	35	480	561	3	14
oat hulls	8		128		3	11
oat meal	45	50	721	801	2 TO 3	14
oat middlings	35	50	561	801	3	14
oats, crimped	19	25	304	400	2 TO 3	12
oats, crushed	25	30	400	480	2	14
oats, groat	46		737		2 TO 3	14
oats, rolled	18		288		3	12
oyster shells, ground	60	65	961	1041	2	18
pabulum	9		144		2	11
peanuts, shelled	35	45	561	721	2 TO 3	16
peanuts, in shell	15	20	240	320	2	14
peas, dried	45	50	721	801	3	15
peas, frozen	27		432		2 TO 3	14
Phosphate rock, crushed	70	85	1121	1361	1	18
Phosphate rock, ground	70	90	1121	1441	1	18
phosphate, super, ground	51		817		1	16
phosphate, monocalcium powder	61		977		1	16
phosphate, dicalcium, granulated	60		961		2 TO 3	16
phosphate trisodium, powder	50		801		1 TO 2	16
phthalic anhydride flakes	42		673		5	14
polyethylene pellets, 1/8"	36		577		2 TO 3	14
polyethylene powder	35	45	561	721	2	14
polystyrene beads	40	45	641	721	3	14
polystyrene powder	33	42	529	673	2	14
polyvinyl chloride powder	45		721		2 TO 3	14
polyvinyl chloride pellets, 1/8"	36	39	577	625	2 TO 3	14
popcorn, popped	6	10	96	160	1	11
popcorn, shelled	45		721		5	14
potassium chloride	60	80	961	1281	1	18
potassium sulfate	42	90	673	1441	1	18

pyrethrum flowers, coarse, grd	20		320		2 TO 3	12
pyrethrum spent flowers	32		513		1 TO 2	12
rice bran	20	26	320	416	2 TO 3	14
rice, clean	30	35	480	561	5	17
rice, grits	42	35	673	561	2 TO 3	14
rice, rough	32	45	513	721	3	17
rye, bran	15	20	240	320	3	14
rye, middlings	42		673		2 TO 3	14
rye, shorts	33		529		2 TO 3	14
rye, malted	33		529		3	14
rye, meal	33		529		3	14
sawdust, fine	18	20	288	320	1	14
seed, clover	45	50	721	801	2 TO 3	14
seed, grass	12	44	192	705	2	12
seed, bluegrass	11	25	176	400	2 TO 3	12
seed, mustard	45		721		5	16
seed, rape	49		785		3	14
seed, sesame	27		432		3	14
seed, sunflower	38		609		3	14
seed, timothy	36		577		3 TO 4	13
semolina	34		545		2	14
shorts	15		240		2 TO 3	14
sorghum seed, milo	47	52	753	833	2 TO 3	14
soybeans, whole	45	50	721	801	3	18
soybeans, cake	45		721		2 TO 3	16
soybeans, cracked	35	40	561	641	3	18
soybean flour	30	35	480	561	2	15
soybean millfeed, pellets	37		593		2 TO 3	14
soybean hulls, unground	7		112		2	11
soybean meal	40		641		3	16
starch, corn, powder	25	50	400	801	1 TO 2	14
starch, lump and pelleted	30		480		3	14
starch, pearl	38		609		2	14
starch, potato	40		641		1	14
starch tablets, crystals	40		641		3 TO 4	14
sugar, dextrose	40	50	641	801	2	16
sugar, granulated	45	55	721	881	2	16
sugar, lactose, granulated	50	55	801	881	2	16
sugar, powdered	35	50	561	801	1	14
sugar, beet	50		801		2	16
sugar, beet, pulp	12	15	192	240	1	12
sugar, brown	40	50	641	801	2	16
sugar, corn	50		801		2	16
sugar, raw	55	65	881	1041	2	16
tea	12	27	192	432	1	12
tobacco leaves	6	14	96	224	1	12
tobacco snuff	30		480		1	12
tobacco stems	15		240		3	12
wheat, cut	46		737		4 TO 5	14
wheat bran	10	15	160	240	2	12
wheat cracked	40	45	641	721	3	14
wheat germ	28		448		2 TO 3	14
wheat middlings	15	30	240	480	2 TO 3	14
wood flour	16	36	256	577	1 TO 2	12
wood chips	10	30	160	480	1	14