

TABLE OF WEIGHTS, MEASURES AND DILUTIONS

Weights

28.35 grams = 1 ounce
 16 ounces = 1 pound = 453.6 grams
 1 gallon water = 8.34 pounds
 1 cubic foot water = 62.4 pounds
 1 gallon No. 2 fuel oil = 7 pounds
 1 gallon kerosene = 6.7 pounds

Volume and Liquid Measure

3 teaspoons = 1 tablespoon = 14.8 cc
 2 tablespoons = 1 fluid ounce = 29.6 cc
 8 fluid ounces = 16 tablespoons = 1 cup = 236.6 cc
 2 cups = 32 tablespoons = 1 pint = 473.1 cc
 2 pints = 64 tablespoons = 1 quart = 946.2 cc
 4 quarts = 256 tablespoons = 1 gallon = 3785 cc
 128 fluid ounces = 1 gallon = 3785 cc

Land Measure

16¹/₂ feet = 5¹/₂ yards = 1 rod
 66 feet = 4 rods = 1 chain
 272¹/₄ square feet = 30¹/₄ square yards = 1 square rod
 4356 square feet = 16 square rods = 1 square chain
 43560 square feet = 160 square rods = 1 acre
 43560 square feet = 10 square chains = 1 acre

Length of Row Required for One Acre

Row Spacing

24 inch
 30 inch
 36 inch
 38 inch
 40 inch
 42 inch
 48 inch

Length or Distance

7,260 yards = 21,780 feet
 5,808 yards = 17,424 feet
 4,840 yards = 14,520 feet
 4,585 yards = 13,756 feet
 4,356 yards = 13,068 feet
 4,149 yards = 12,446 feet
 3,630 yards = 10,890 feet

Determining Contents — Standard 55-Gallon Drum

Drum on Side		Drum Upright	
Depth of Liquid in Inches	Volume in Gallons	Depth of Liquid in Inches	Volume in Gallons
1	0.89	1	1.7
2	2.4	2	3.4
3	4.4	3	5.2
4	6.7	4	6.7
5	9.3	5	8.6
6	12.0	6	10.3
7	14.8	7	12.0
8	17.8	8	13.8
9	20.9	9	15.5
10	24.0	10	17.2
11	27.2	11	18.9
12	30.2	12	20.6
13	33.4	13	22.4
14	36.5	14	24.1
15	39.5	15	25.0
16	42.5	16	27.5
17	45.3	17	29.3
18	47.9	18	30.9
19	50.3	19	32.7
19.75	52.0	20	34.4
		21	36.1
		22	37.8
		23	39.6
		24	41.3
		25	43.0
		26	44.8
		27	46.5
		28	48.2
		29	49.9
		30	51.6
		30.19	52.0

Travel Speed Chart

Miles per Hour	Time Required in Seconds to Travel		
	100 Ft	200 Ft	300 Ft
1	68	136	205
2	34	68	102
3	23	46	68
4	17	34	51
5	14	27	41
6	11	23	34
7	10	20	29
8	9	17	26
9	8	15	23
10	7	14	21

1 MPH = 88 feet per minute

1 MPH = 1.466 feet per second

$$\text{Speed in MPH} = \frac{\text{Distance (ft)} \times 60}{\text{Time (seconds)} \times 88}$$

Tables of Dilutions for Liquids and Dusts

1. Equivalent Quantities of Liquid Materials When Mixed by Parts.

Water	Amount of Insecticides for Different Dilutions		
	1-400	1-800*	1-1600
100 gals	1 qt	1 pt	1 cup
50 gals	1 pt	1 cup	1/2 cup
5 gals*	3 T	5 t*	2 1/2 t
1 gal	2 t	1 t	1/2 t

*Example: If a recommendation calls for 1 part of the chemical to 800 parts of water, it would take 5 teaspoonfuls in 5 gallons of water to give 5 gallons of a mixture of 1-800.

2. Equivalent Quantities of Dry Materials (Wettable Powders) for Various Quantities of Water.

Water	Quantity of Material					
	1 lb	2 lb	3 lb	4 lb*	5 lb	6 lb
100 gals*	1 lb	2 lb	3 lb	4 lb*	5 lb	6 lb
50 gals	8 oz	1 lb	1 1/2 lb	2 lb	2 lb	3 lb
5 gals*	3 T	1 1/2 oz	2 1/2 oz	3 1/4 oz*	4 oz	5 oz
1 gal	2 t	3 t	1 1/2 T	2 T	3 T	3 T

*Example: If a recommendation calls for a mixture of 4 pounds of a wettable powder to 100 gallons of water, it would take 3 1/4 ounces (approximately 6 1/2 teaspoons) to 5 gallons of water to give 5 gallons of spray mixture of the same strength.

Note: Wettable pesticide materials vary considerably in density. Therefore, the teaspoonful (t) and tablespoonful (T) measurements in this table are not exact dosages by weight but are within the bounds of safety and efficiency for mixing small amounts of spray.

3. Equivalent Quantities of Liquid Materials (Emulsion, Concentrates, etc.) for Various Quantities of Water.

Water	Quantity of Material					
	1/2 pt	1 pt	2 pts	3 pts	4 pts*	5 pts
100 gals*	1/2 pt	1 pt	2 pts	3 pts	4 pts*	5 pts
50 gals	4 fl oz	8 fl oz	1 pt	24 fl oz	1 qt	2 1/2 pts
5 gals	1 T	1 fl oz	2 fl oz	2 1/2 fl oz	3 fl oz	4 fl oz
1 gal*	1/2 t	1 t	2 t	3 t	4 t*	5 t

*Example: If 4 pints of a liquid concentrate is recommended to 100 gallons of water, 4 teaspoonfuls of the chemical to 1 gallon of water will give a mixture of the same strength.

4. Table of Pounds of Active Ingredients per Gallon, Pounds per Pint of Liquid, and the Number of Pints for Various per Acre Rates.

Pounds of active ingredients in one gallon of commercial product	Pounds of active ingredients per pint*	Pints of commercial product needed each acre to give the following pounds of active ingredient					
		1/4 lb/A	1/2 lb/A	3/4 lb/A	1 lb/A	1 1/2 lbs/A	2 lbs/A
2.00	0.25	1 pt	2 pts	3 pts	4 pts	6 pts	8 pts
2.64	0.33	3/4	1 1/2	2 1/4	3	4 1/2	6
3.00	0.375	2/3	1 1/3	2	2 2/3	4	5 1/3
3.34	0.42	3/5	1 1/5	1 4/5	2 2/5	3 3/5	4 4/5
4.00	0.50	1/2	1	1 1/2	2	3	4
6.00	0.75	1/3	2/3	1	1 1/3	2	2 2/3

*1 pint = 16 liquid ozs. Liquid ounces may be measured with a discarded prescription bottle, liquid measuring cup, or a baby bottle.

5. Table of Available Commercial Materials in Pounds Active Ingredients per Gallon Necessary to Make Various Percentage Concentration Solutions.*

Pounds of active ingredients in one gallon of commercial product	Pounds of active ingredients per pint*	Liquid ounces of commercial product per one gallon solution* to make:				
		1/2%	1%	2%	5%	10%
	liq oz	liq oz	liq oz	liq oz	liq oz	liq oz
2.00	0.25	2.68	5.36	10.72	26.80	53.60
2.64	0.33	2.02	4.05	8.10	20.25	40.50
3.00	0.375	1.78	3.56	7.12	17.80	35.60
3.34	0.42	1.59	3.18	6.36	15.90	31.80
4.00	0.50	1.34	2.68	5.36	13.40	31.80
6.00	0.75	0.89	1.78	3.56	8.90	17.80

*Based on 8.4 pounds per gallon (weight of water)

Field Re-Entry Times for Insecticides

Common Name	Trade Name	Re-entry Period-Hours
abamectin	Agri-Mek, Epi-Mek	12
acephate	Orthene, SpitFire	24
acetamiprid	Intruder, Strafer	12
aldicarb	AgLogic	48
azinphos-methyl	Guthion	7-44 days
bifenthrin	Capture, Discipline, Brigade	12
carbaryl	Sevin	12
chlorantraniliprole	Altacor, Coragen, Prevathon	4
chlorantraniliprole/lambda-cyhalothrin	Besiege	24
chlorpyrifos	Lorsban, Nufos, Warhawk	24
chlorpyrifos/lambda-cyhalothrin	Cobalt Advanced	24
clothianidin	Belay	12
cyfluthrin	Baythroid, Tombstone	12
cyfluthrin/imidacloprid	Leverage	12
cypermethrin	Ammo	12
dicofol	Dicofol, Kelthane	12
dicrotophos	Bidrin, Dicromax	6 days
dimethoate	Dimate	48
disulfoton	Di-Syston	48
emamectin benzoate	Denim	12
endosulfan	Thiodan, Thionex	48
esfenvalerate	Asana XL, Adjourn	12
etoxazole	Zeal	12
fenbutatin oxide	Vendex	48
fenpyroximate	Fujimite, Portal	12
fipronil	Regent	0

Common Name	Trade Name	Re-entry Period-Hours
flonicamid	Carbine, Beleaf	12
flubendiamide	Belt	12
flupyradifurone	Sivanto	4
gamma-cyhalothrin	Prolex, Proaxis, Declare	24
imidacloprid	Admire, Alias, Couraze, Trimax	12
indoxacarb	Steward, Avaunt	12
lambda-cyhalothrin	Karate, Silencer	24
lindane	Lindane	24
malathion	Atrapa, Fyfanon	12
methomyl	Lannate	2-7 days
methoxyfenozide	Intrepid	4
nucleopolyhedrovirus	Heligen	4
novaluron	Diamond	12
oxamyl	Vydate	48
permethrin	Ambush	12
propargite	Comite	2-20 days
spinetoram	Radiant	4
spinosad	Tracer, Blackhawk, Spintor	4
spiromesifen	Oberon	12
sulfoxaflor	Transform, Closer	24
tebufenozide	Confirm	4
thiamethoxam	Centric, Actara	12
thiamethoxam/lambda-cyhalothrin	Endigo	24
thiodicarb	Larvin	48
zeta-cypermethrin	Mustang Maxx, Respect	12
zeta-cypermethrin+bifenthrin	Hero	12