

## 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

16<sup>1</sup>/<sub>2</sub> feet = 5<sup>1</sup>/<sub>2</sub> yards = 1 rod  
 66 feet = 4 rods = 1 chain  
 272<sup>1</sup>/<sub>4</sub> square feet = 30<sup>1</sup>/<sub>4</sub> 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					
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).