



4011 County Road 25, Dundee, NY 14837 – 607-292-3010

Desiccant Requirement Chart

Cubic Inches	Cubic Feet	Gallons	Square Inches	Square Feet
237-475	.14-.28	1.1-2.1	15-29	0.1-0.19
476-714	.29-.42	2.2-3.2	30-45	0.2-0.29
715-1274	.43-.82	3.3-6.3	46-89	0.3-0.59
1275-2499	.83-1.66	6.4-12.5	90-179	.06-1.20
2500-3849	1.67-2.49	12.6-18.6	180-269	1.20-1.29
3850-4286	2.50-3.32	18.7-24.9	270-359	1.30-1.89
4287-5713	3.33-4.16	25.0-31.1	360-449	1.90-2.49
5714-7142	4.17-4.99	31.2-37.3	450-539	2.50-3.09
7143-8570	5.00-5.82	37.4-43.5	540-629	3.10-4.39
8571-9999	5.83-6.66	43.6-49.9	630-719	4.40-4.99

Cubic Inches	Cubic Feet	Gallons	Square Inches	Square Feet
1000-11422	6.67-7.49	50.0-56.0	720-809	5.00-5.59
11423-12856	7.50-8.32	56.1-62.2	810-899	5.60-6.29
12857-14285	8.33-9.99	62.3-74.7	900-1079	6.30-7.49
14286-17142	10.00-11.68	74.8-87.2	1080-1259	7.50-8.79
17143-19999	11.69-13.32	87.3-99.6	1260-1439	8.80-9.99
20000-22856	13.33-16.66	99.7-124.9	1440-1799	10.00-12.49
22857-28570	16.67-24.99	125.0-186.9	1800-2699	12.50-18.79
28571-42856	25.00-33.32	187.0-248.9	2700-3599	18.80-24.99
42857-57142	33.33-41.66	249.00-XXXX	3600-4499	25.00-31.29
57143-71428	41.67-49.99	XXXXX	4500-5399	31.30-37.49
71429-85713	50.00-58.20	XXXXX	5400-6299	37.50-43.79
85714-99999	58.30-66.69	XXXXX	6300-7199	43.80-49.99
100000-114286	66.70-XXXX	XXXXX	7200-XXXX	50.00-XXXX

Desiccant Unit Calculation Formula

Formula I - To find units of desiccant for use within a sealed container other than rigid all metal:

$$U = CA + X1D + X2D + X3D + X4D$$

Formula II - To find Units of desiccant for use within a sealed rigid metal container:

$$U = KV + X1D + X2D + X3D + X4D$$

Symbols Defined:

U

The number of units of desiccant to be used.

C

0.011 when the area of the barrier material is stated in square inches.
- OR -

1.6 when the area of the barrier material is stated in square feet.

A

Area of container (barrier) stated in square inches or square feet.

K

0.0007 when volume is stated in cubic inches.
- OR -

1.2 when volume is stated in cubic feet.

V

Volume within rigid metal container in cubic inches or cubic feet.

X1

8.0 for cellulosic material, including wood and any other material not noted below.

X2

3.6 for bound fibers (synthetic or vegetable fibers bound with rubber).

X3

2.0 for glass fibers (fiberglass).

X4

0.5 for synthetic foams and rubber

D

Pounds of dunnage within the container

Note: Formula II may also be used to determine the units of desiccant required for sealed rigid containers other than all metal, when the sealed enclosure provides a WVTR not exceeding 0.001 grams per 100 square inches, tested in accordance with ASTM-D4279 using the constant atmosphere method.

Requirements and Definitions

Department of Defense Standard Practice for Military Packaging

1. 3.10 Military Packaging - A means of specifying the military preservation and packaging that a given item to ensure that it is not degraded during shipment and storage.
 1. a. Military preservation: Application of materials and/or methods designed to protect an item during shipment, handling, in determine storage and distribution to consignees worldwide.

2. b. Military packing: Application of any exterior protective methods, materials, or devices to assure the integrity of the preserved item as follows:
 1. (1) Level A. Protection required to meet the most severe worldwide shipment, handling, and storage conditions. A Level A pack must, in tandem with the applied method of preservation, be capable of protecting material from the effects of direct exposure to extremes of climate, terrain, and operational and transportation environments. Examples of situations which indicate a need for use of a Level A pack are: War Reserve Material, mobilization, strategic and theater deployment and employment, open storage, deck loading and Foreign Military Sales (as specified in the contract). Examples of containers used for Level A packing requirements include, but are not limited to, overseas type wood boxes, and plastic and metal reusable containers.
 2. (2) Level B. Protection required to meet moderate worldwide shipment, handling, and storage conditions. A Level B pack must, in tandem with applied preservation, be capable of protecting material not directly exposed to extremes of climate, terrain, and operational and transportation environments. Examples of situations which indicate a need for use of a Level B pack are: security assistance, such as Foreign Military Sales (as specified in the contract) and containerized overseas shipments. Examples of containers used for Level B packing requirements include, but are not limited to, domestic wood crates, weather-resistant fiberboard containers, fast pack containers, weather-resistant fiber drums, and weather-resistant paper and multi-wall shipping sacks.

Desiccant (activated)

The bagged, activated desiccant shall conform to MIL-D-3464. Type I shall be used unless Type II or III is specified or required because of special characteristics of the item. Desiccant shall be in standard unit sized bags. The desiccant shall be strategically located in the pack so as not to be load bearing. Optimally, it is to be placed in voids of the item or pack interior. Under no circumstances shall desiccant be permitted to come in direct contact with critical surfaces of the enclosed item. The desiccant shall not be unnecessarily exposed to the ambient environment when removed from the sealed desiccant storage container. Removal of the desiccant and its insertion into the unit pack shall be the last action prior to final sealing of the bag or container.

Humidity Indicators

Humidity indicators shall conform to MS20003. The humidity indicator shall be firmly secured directly behind the inspection window or immediately within the closure seal of the container. When specified, externally mounted humidity indicating elements or devices shall be installed in the barrier or rigid container used to effect the unit pack. Externally mounted color change indicating devices shall conform to SAE-AS26860.