

Desiccant is a drying agent used to lower the moisture content of air inside a closed space, such as a Moisture Barrier Bag (ANSI/ESD S11.4 Level 1 and Level 2 Static Control Bags). Desiccant is packaged in fractional units in order to facilitate its usage with a variety of bag sizes. One full "unit" of packaged desiccant will absorb the following quantities of water at equilibrium with air at 77°F (25°C): 3.00 grams @ 20% rH and 6.00 grams @ 40% rH, when tested to MIL-D-3464.

In order to provide a complete moisture barrier packaging assembly, desiccant must be inserted into the bag, prior to having the bag vacuum sealed. The recommended amount of desiccant is dependent on the interior surface area of the bag to be used. The table is a reference indicating recommended minimum amounts of desiccant that should be used with [Moisture Barrier Bags](#).



13843 & 13844

13840 & 13850

"...it is important to take possible temperature exposure into account when shipping electronic parts. It is particularly important to consider what happens to the interior of a package if the environment has high humidity. If the temperature varies across the dew point of the established interior environment of the package, condensation may occur. The interior of a package should either contain desiccant or the air should be evacuated from the package during the sealing process. The package itself should have a low WVTR." (ESD Handbook ESD TR20.20 section 5.4.3.2.2)

INTERIOR BAG SURFACE AREA*	NUMBER OF DESICCANT UNITS		
	**MIH <20%	MIH <30%	MIH < 40%
100 sq. in.	1.5	1.0	1.0
130 sq. in.	2.0	1.5	1.0
160 sq. in.	2.0	1.5	1.5
200 sq. in.	2.5	2.0	1.5
240 sq. in.	3.0	2.0	1.5
290 sq. in.	4.0	2.5	2.0
340 sq. in.	4.5	3.0	2.5
390 sq. in.	5.0	3.5	2.5
450 sq. in.	5.5	4.0	3.0
510 sq. in.	6.5	4.5	3.5
580 sq. in.	7.5	5.0	4.0
650 sq. in.	8.0	5.5	4.0
720 sq. in.	9.0	6.0	4.5

Table for recommended desiccant usage. Information taken out of EIA-583, Table 1, Page 8.

*To measure interior bag surface area, multiply length x width x 2

**MIH = Maximum Interior Humidity (%)

Desiccant paks are available from Desco in the following unit sizes and standard packages:

Item #	Unit Size	Std. Package	Dimensions
13840	1/2 unit	Box of 700	1.5" x 3"
13843	1 unit	Box of 450	2" x 4"
13844	1 unit	Pail of 300	2" x 4"
13850	1/2 unit	Pail of 550	1.5" x 3"

As packaged Desco 13850 meets MIL-D-3464, Type II and is on the QPL (Qualified Product List). Click [here](#) to see Desi-Pak (supplier Cage Code 00334).

Fill Contents: Activated Clay
Paper: Tyvek
Warranty: 3 Years from date of manufacture



Made in the United States of America

Specifications and procedures subject to change without notice.

Desiccant Pak		
	DRAWING NUMBER 13850	DATE: December 2013



DESCO SAFETY DATA SHEET

May be used to comply with ANSI Z400.1-2004, and Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012). Standards must be consulted for specific requirements.

Revision Date: 2018-02-27

SECTION 1 — IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers

Product Name: Desi Pak
EC No.: None
REACH Registration No.: None
CAS No.: None

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use: Desiccant

1.3 Details of the supplier of the safety data sheet

Supplier: Desco
3651 Walnut Ave
Chino, CA 91710
(909) 627-8178
Email Address: Service@Desco.com

1.4 Emergency telephone number

Emergency Number: (909) 627-8178

SECTION 2 — HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

No reportable hazardous components as defined by the Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012).

2.2 Label elements

Not a dangerous substance according to GHS.

2.3 Other hazards

None known.

SECTION 3 — COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

No reportable hazardous components as defined by the Globally Harmonized System (OSHA Hazcom 29 CFR 1910.1200, (EU) No.453/2010 and Japan JIS 7253:2012).

SECTION 4 — FIRST AID MEASURES

4.1 Description of first aid measures

General advice	No known delayed effects. Consult a physician for all exposures except for minor instances.
If inhaled	INHALATION: If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention. Get medical attention if cough and other symptoms develop. If you feel unwell, seek medical advice (show the label where possible).
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Use a mild soap if available.
In case of eye contact	Do not rub affected area. Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

If swallowed Normally not needed. If whole canisters or sachets are ingested, call a physician or your local Poison Control Center (1-800-222-1222 in the United States).

4.2 Most important symptoms and effects, both acute and delayed

Most important symptoms and effects, both acute and delayed The possible symptoms known are those derived from the labelling (see section 2). No additional symptoms are known.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

SECTION 5 — FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable Extinguishing Media The product itself does not burn.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray jet
Dry powder
Foam
Carbon dioxide (CO₂)

Unsuitable Extinguishing Media No restrictions

5.2 Special hazards arising from the substance or mixture

The product is not flammable.
Does not sustain combustion.
No hazardous decomposition products are known.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.
Special sliding risk through leaking of spilled product in connection with water.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation.
Avoid dust formation.
Evacuate personnel to safe areas.
Avoid contact with skin, eyes and clothing.
Wear personal protective equipment.
Avoid breathing dust.
Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust).
Special sliding risk through leaking of spilled product in connection with water.
Wearing appropriate personal protective equipment, contain spill and collect into a suitable container.
No special precautions required.

6.2 Environmental precautions

No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Pick up and transfer to properly labelled containers.
If product is released from trucks in roads, place signposts and remove the spill using vacuum cleaning systems.

6.4 Reference to other sections

See SECTION 8 and SECTION 13.

SECTION 7 — HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling Use of proper hygiene practices in the workplace is recommended.
Hygiene measures Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	Minimize airborne dust generation and prevent wind dispersal during loading and unloading. Keep containers closed and store packaged products so as to prevent accidental bursting.
Advice on storage compatibility	No conditions to be specially mentioned.
Storage stability	Store in a dry place.
7.3 Specific end uses	Not relevant

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	Use ventilation adequate to keep exposures below recommended exposure limits. See the safety datasheet.
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8.2 Exposure controls

Personal protective equipment

Respiratory protection	Use local exhaust if dusting occurs. Good general ventilation is adequate in the absence of dusts.
Hand protection	Wear protective gloves. Wash thoroughly after handling.
Eye protection	Safety glasses with side-shields.
Skin and Body protection	Wear suitable protective equipment.
Hygiene measures	Wash hands before breaks and at the end of workday.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	lumpy, granular, powder
Color:	bright to earthy
Odor:	None
Odor Threshold:	Not determined
pH:	6.0 - 11.0 (20°C)
Melting point/range:	Method: aqueous suspension > 450°C Method: EU A.1
Boiling point/boiling range:	not applicable (solid with a melting point > 450°C)
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability (solid, gas):	Does not ignite Method: EU A.1
Self-ignition:	Method: 92/69/EEC, A.6. No relative self-ignition temperature below 400°C
Upper explosion limit:	Not applicable
Lower explosive limit:	Non explosive (void of any chemical structures commonly associated with explosive properties)
Vapor pressure:	not applicable (solid with a melting point > 450°C)
Vapor density relative to air:	Non applicable
Density:	2.6 g/cm ³
Bulk density:	500 - 1,100 kg/m ³
Solubility (Water):	< 0.9 g/l (20°C) Method: Tested according to Directive 92/69/EEC.
Partition coefficient (n-octanol/water):	No applicable inorganic
Auto-ignition temperature:	Not determined
Decomposition temperature:	No decomposition if used as directed.
Viscosity (dynamic):	Not applicable
Viscosity (kinematic):	Not applicable

Oxidizing properties:

No oxidizing properties (Based on the chemical structure, the substance does not contain a surplus of oxygen or any structural groups known to be correlated with a tendency to react exothermally with combustible material).

9.2 Other information

None known.

SECTION 10 — STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

The product is chemically stable.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Forms slippery/greasy layers with water.

10.5 Incompatible materials

Inert, not reactive. Avoid storing together with materials that may be affected by dust.

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11 — TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Information on likely routes of exposure

Eye contact.

Ingestion

Acute toxicity

Acute oral toxicity

LD50 (Rat): > 2 g/kg

Method: OECD Test Guideline 420

Acute inhalation toxicity

No data available

Acute dermal toxicity

No data available

Bentonite is almost insoluble and has a low absorption through the skin.

Skin corrosion/irritation

Species: Rabbit

Method: OECD Test Guideline 404

Result: No skin irritation

Serious eye damage/eye irritation

Species: Rabbit

Method: OECD Test Guideline 405

Result: No skin irritation

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Genotoxicity in vitro

Test Type: In vitro gene mutation study in bacteria
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

Test Type: In vitro gene mutation study in mammalian cells
Method: OECD Test Guideline 476
Result: negative

Carcinogenicity

IARC

Not listed

OSHA

Not listed

NTP

Not listed

Reproductive toxicity

Effects on fertility

Based on available data, the classification criteria are not met.

STOT - Single exposure

No organ toxicity observed in acute tests.

Aspiration toxicity

No aspiration toxicity classification.

Experience with human exposure

General Information

The possible symptoms known are those derived from the labelling (see section 2).

SECTION 12 — ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish

LC50 (Oncorhynchus mykiss (rainbow trout)): 16 g/l
Exposure time: 96 h
LC50 (Marine water fish): 2.8 - 3.2 g/l
Exposure time: 24 h

Toxicity to daphnia and other aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
EC50 (Metacarcinus magister): 81.6 mg/l
Exposure time: 96 h
EC50 (Pandalus danae): 24.8 mg/l
Exposure time: 96 h

Toxicity to algae

EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): > 100 mg/l
Exposure time: 72 h

Plant toxicity

(Phaseolus vulgaris): 84.4 mg/kg
Remarks: No effect on the growth was observed.
(Zea mays): 84.4 mg/kg
Remarks: No effect on the growth was observed.

12.2 Persistence and degradability

Biodegradability

The methods for determining biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Bioaccumulation Not relevant for inorganic substances.

12.4 Mobility in soil

Distribution among environmental compartments Medium: Soil
Bentonite is almost insoluble and thus presents a low mobility in most soils.

12.5 Results of PBT and vPvB assessment

No data available

12.6 Other adverse effects

Additional ecological information According to experience and to the information currently available, the product has no harmful effects on the environment if used correctly as intended.

SECTION 13 — DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

RCRA - Resource Conservation and Recovery Authorization Act No -- Not as sold.

Water Code NONE

Waste from residues This product, if discarded as sold, is not a Federal RCRA hazardous waste. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Contaminated packaging No specific requirements.

SECTION 14 — TRANSPORT INFORMATION

DOT Not restricted

IATA Not restricted

IMDG Not restricted

14.1 UN Number N/A

14.2 UN proper shipping name N/A

14.3 Transport hazard class(es) N/A

14.4 Packing group N/A

14.5 Environmental hazards N/A

14.6 Special precautions for user N/A

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code N/A

SECTION 15 — REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards No SARA Hazards

SARA 313 This product is not subject to SARA Title III Section 313 reporting requirements under 40 CFR 372.

Clean Water Act

Contains no known priority pollutants at concentrations greater than 0.1%.

The components of this product are reported in the following inventories:

TSCA	All components of this product are listed or excluded from listing on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) Inventory.
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15.2 Chemical Safety Assessment Not relevant

SECTION 16 — OTHER INFORMATION

HMIS RATING	Health 0, Flammability 0, Reactivity 0, Personal Protection B
NFPA RATING	Special Hazard: N/A, Health: 0, Flammability: 0, Instability: 0
SDS Updated	2018-02-27

Disclaimer

OTHER INFORMATION: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.