

DOWFLAKE™ Xtra

83-87% CALCIUM CHLORIDE

General Description

DOWFLAKE™ Xtra 83-87% Calcium Chloride is an odorless, flaked product. DOWFLAKE Xtra calcium chloride meets ASTM D98 and AASHTO M144 requirements for calcium chloride purity. ASTM classification for DOWFLAKE Xtra calcium chloride is "Type S; Grade 1, Class A."

Applications

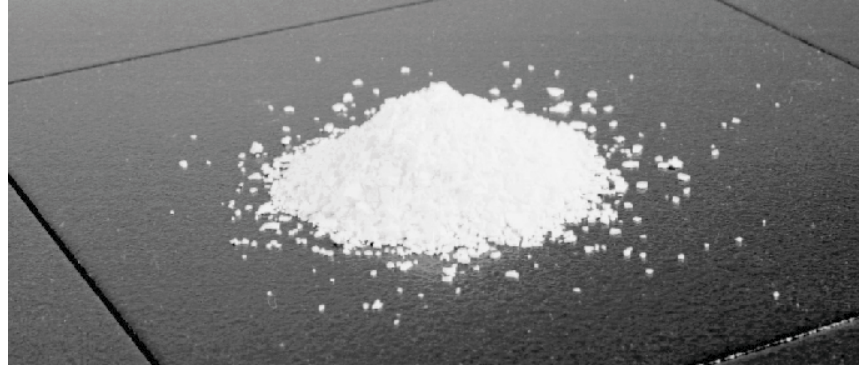
DOWFLAKE Xtra calcium chloride possesses several unique properties that make it the ideal choice for dust control, deicing and concrete acceleration applications.

When applied to unpaved roadways, parking lots, walkways and golf cart paths, DOWFLAKE Xtra calcium chloride reduces dust by continuously absorbing moisture from the air, keeping the surface slightly damp and binding dust particles to larger aggregate.

The heat releasing property of DOWFLAKE Xtra calcium chloride works to melt snow and ice faster than rock salt, magnesium chloride, potassium chloride, urea or blends of these products.

The addition of DOWFLAKE Xtra calcium chloride to concrete results in higher earlier strength, faster setting time, improved workability and uniform cure for concrete.

Other approved applications for DOWFLAKE Xtra calcium chloride, such as tire weighting and brine refrigeration, require putting the material into solution. Refer to the information on the back of this sheet for guidance on dissolving DOWFLAKE Xtra calcium chloride in water to make solutions of various concentrations.



Product Properties

Test Item	Specification Limit	Typical Values	Notes*
Calcium chloride assay	83% min.	85%	1
Total alkali chlorides, (as NaCl)	6.0% max.	4.1%	2
Total magnesium (as MgCl ₂)	0.5% max.	0.03%	2
Calcium hydroxide	0.2% max.	0.07%	2
Passing U.S. Std 3/8 inch sieve	100% min.	100%	
Passing U.S. Std #4 sieve	80% min.	94%	
Passing U.S. Std #30 sieve	5% max.	1%	
Bulk Density	45 – 54 lbs/ft ³	49 lbs/ft ³	3

*Notes: (all percentages are by weight)

1. Test method is similar to ASTM E449, (Standard Test Methods for Analysis of Calcium Chloride). This method is not capable of differentiating between calcium chloride and certain salt impurities, most notably those containing strontium and bromide.
2. Reported on an active ingredient basis. To convert from an "active ingredient" basis to an "as received" basis, multiply the impurity % by the CaCl₂ assay in decimal form. For example, total alkali chlorides at 4.1% on an "active ingredient" basis = 4.1% x 0.85 = 3.49% on an "as received" basis for 85% CaCl₂.
3. Bulk density is a specification item for bulk shipments only.

Safety and Handling

For brief contact, no precautions other than clean body-covering clothing should be needed. Selection of specific items such as goggles, gloves, and apron will depend on the operation. Eye/face protection is recommended for dusty operations or when handling solutions. Appropriate ventilation

should be in place to keep atmospheric levels below industrial hygiene guidelines (Dow IHG for calcium chloride is 10m³).

Availability

DOWFLAKE Xtra calcium chloride is available in various package sizes and in bulk truck and bulk rail.

Consult authorities for proper disposal information.

Making Calcium Chloride Solutions from DOWFLAKE™ Xtra 83-87% Calcium Chloride

Calcium chloride releases a great deal of heat when it is dissolved. Make sure that the dissolving vessel

is appropriately constructed for handling hot solutions. Fill the vessel with cool water (less than 80°F/26°C), then slowly add calcium chloride while continuously stirring or agitating. Solids kept in motion will

dissolve quickly, however solids that sit motionless on the vessel bottom may form a hard cake that will dissolve more slowly.

Table 1. Making 100 Gallons of Solution from DOWFLAKE Xtra Calcium Chloride (English Units)*

% CaCl ₂ Target	Specific Gravity (77°F)	Density @ 77°F (lbs/gal)	Weight Xtra to dissolve (lbs)	Water Volume (gal)	Expected temp rise (°F)	Solution Freeze Point (°F)
26	1.251	10.50	319	87	62	-31
28	1.275	10.60	350	86	67	-46
30	1.298	10.79	382	84	72	-52
32	1.322	10.99	415	82	77	-17
34	1.345	11.18	448	81	80	+10
36	1.369	11.38	483	79	84	+30
38	1.392	11.57	518	77	87	+48
40	1.416	11.77	555	75	88	+61
42	1.439	11.96	592	73	89	+69

Table 2. Making 100 Liters of Solution from DOWFLAKE Xtra Calcium Chloride (Metric Units)*

% CaCl ₂ Target	Specific Gravity (25°C)	Density @ 25°C (kg/liter)	Weight Xtra to dissolve (kg)	Water Volume (liter)	Expected temp rise (°C)	Solution Freeze Point (°C)
26	1.251	1.247	38	87	34	-35
28	1.275	1.271	42	86	37	-43
30	1.298	1.294	46	84	40	-47
32	1.322	1.318	50	82	43	-27
34	1.345	1.341	54	81	44	-12
36	1.369	1.365	58	79	47	-1
38	1.392	1.388	62	77	48	+9
40	1.416	1.412	67	75	49	+16
42	1.439	1.435	71	73	49	+21

*To make up solution volumes different from those used as the basis above, (100 gallon or 100 liter), simply adjust the Weight DOWFLAKE Xtra calcium chloride to dissolve and the Water Volume numbers in the tables by the ratio of the desired solution volume to 100.

For example, to make 2000 gallons of 32% solution:

lbs. DOWFLAKE Xtra calcium chloride to dissolve = 415 x (2000/100) = 8300 lbs.

Water Volume = 82 x (2000/100) = 1640 gals.

For more information:

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