



# Material Safety Data Sheet

The Dow Chemical Company

**Product Name:** DOWFLAKE XTRA (40 KG Bag)

**Issue Date:** 2006.10.16

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The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. Product and Company Identification

**Product Name**

DOWFLAKE XTRA (40 KG Bag)

**COMPANY IDENTIFICATION**

The Dow Chemical Company  
2030 Willard H. Dow Center  
Midland, MI 48674  
USA

**Prepared By:**

Prepared for use in Canada by EH&S, Product Regulatory  
Management Department.  
450-652-1029

**Revision**

2006.10.16

**Print Date:**

10/28/2006

Customer Information Number:

800-258-2436

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:**

989-636-4400

**Local Emergency Contact:**

519-339-3711

## 2. Hazards Identification

**Emergency Overview**

**Color:** White

**Physical State:** Flakes

**Odor:** Odorless

**Hazards of product:**

WARNING! Causes eye irritation. May cause skin irritation. May be harmful if swallowed.

\* Indicates a Trademark

**Potential Health Effects**

**Eye Contact:** For dust: May cause severe eye irritation. May cause corneal injury. Effects may be slow to heal.

**Skin Contact:** Brief contact is essentially nonirritating to skin. Prolonged contact may cause skin irritation, even a burn. Not classified as corrosive to the skin according to DOT guidelines. May cause more severe response if skin is damp. May cause more severe response if skin is abraded (scratched or cut). May cause more severe response on covered skin (under clothing, gloves).

**Skin Absorption:** Prolonged skin contact is unlikely to result in absorption of harmful amounts.

**Inhalation:** Dust may cause irritation to upper respiratory tract (nose and throat). Vapors are unlikely due to physical properties.

**Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

**Effects of Repeated Exposure:** The data presented are for the following material: Potassium chloride. In animals, effects have been reported on the following organs after ingestion: Gastrointestinal tract. Heart. Kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

### 3. Composition/information on ingredients

Component	CAS #	Amount W/W
Calcium chloride	10043-52-4	> 83.0 - < 87.0 %
Water	7732-18-5	> 8.0 - < 14.0 %
Potassium chloride	7447-40-7	> 2.0 - < 3.0 %
Sodium chloride	7647-14-5	> 1.0 - < 2.0 %

Amounts are presented as percentages by weight.

### 4. First-aid measures

**Eye Contact:** Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

**Skin Contact:** Wash skin with plenty of water.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Ingestion:** Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

**Notes to Physician:** Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

### 5. Fire Fighting Measures

**Extinguishing Media:** This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers,

boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

**Unusual Fire and Explosion Hazards:** Heat is generated when product mixes with water.

**Hazardous Combustion Products:** Not applicable.

See Section 9 for related Physical Properties

## 6. Accidental Release Measures

**Steps to be Taken if Material is Released or Spilled:** Small and large spills: Contain spilled material if possible. Collect in suitable and properly labeled containers. Flush residue with plenty of water. See Section 13, Disposal Considerations, for additional information.

**Personal Precautions:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

**Environmental Precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

## 7. Handling and Storage

### Handling

**General Handling:** Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 80°F, 27°C). Avoid contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly after handling. Keep container closed. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

### Storage

Store in a dry place. Protect from atmospheric moisture.

## 8. Exposure Controls / Personal Protection

### Exposure Limits

Component	List	Type	Value
Calcium chloride	Dow IHG	TWA	10 mg/m <sup>3</sup>
	CAD ON OEL	TWA	5 mg/m <sup>3</sup>

*Consult local authorities for recommended exposure limits.*

### Personal Protection

**Eye/Face Protection:** Use safety glasses. For dusty operations or when handling solutions of the material, wear chemical goggles.

**Skin Protection:** Wear clean, body-covering clothing.

**Hand protection:** Use gloves chemically resistant to this material. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Neoprene. Polyvinyl chloride ("PVC" or "vinyl"). Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body

reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Respiratory Protection:** Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: Particulate filter.

**Ingestion:** Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

### Engineering Controls

**Ventilation:** Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

## 9. Physical and Chemical Properties

Physical State	Flakes
Color	White
Odor	Odorless
Flash Point - Closed Cup	<i>Not applicable</i>
Flammable Limits In Air	<b>Lower:</b> <i>Not applicable</i> <b>Upper:</b> <i>Not applicable</i>
Autoignition Temperature	<i>Not applicable</i>
Vapor Pressure	<i>Literature negligible at ambient temperature</i>
Boiling Point (760 mmHg)	<i>Not applicable .</i>
Vapor Density (air = 1)	<i>Not applicable</i>
Specific Gravity (H <sub>2</sub> O = 1)	<i>Not applicable</i>
Bulk Density	45 - 54 lb/ft <sup>3</sup> <i>Estimated</i>
Freezing Point	<i>Not applicable</i>
Melting Point	260 °C <i>Literature</i>
Solubility in Water (by weight)	<i>Literature readily soluble</i>
pH	<i>Not applicable</i>
Hygroscopic.	Yes

## 10. Stability and Reactivity

### Stability/Instability

Stable. Hygroscopic.

**Conditions to Avoid:** None known. Avoid moisture.

**Incompatible Materials:** Heat is generated when mixed with water. Spattering and boiling can occur. Avoid contact with: Sulfuric acid. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as: Zinc. Sodium. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromate.

### Hazardous Polymerization

Will not occur.

### Thermal Decomposition

Does not decompose.

## 11. Toxicological Information

### Acute Toxicity

**Ingestion**

For the major component(s): LD50, Rat 900 - 2,100 mg/kg

**Skin Absorption**

For the major component(s): LD50, Rabbit > 5,000 mg/kg

**Repeated Dose Toxicity**

The data presented are for the following material: Potassium chloride. In animals, effects have been reported on the following organs after ingestion: Gastrointestinal tract. Heart. Kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

**Developmental Toxicity**

For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

**Genetic Toxicology**

The data presented are for the following material: Calcium chloride or CaCl<sub>2</sub>. In vitro genetic toxicity studies were negative. The data presented are for the following material Potassium chloride. In vitro genetic toxicity studies were positive. However, the relevance of this to humans is unknown.

## 12. Ecological Information

**CHEMICAL FATE**

Data for Component: **Calcium chloride**

**Movement & Partitioning**

No bioconcentration is expected because of the relatively high water solubility. Partitioning from water to n-octanol is not applicable.

**Persistence and Degradability**

Biodegradation is not applicable.

Data for Component: **Potassium chloride**

**Movement & Partitioning**

Partitioning from water to n-octanol is not applicable.

**Persistence and Degradability**

Biodegradation is not applicable.

Data for Component: **Sodium chloride**

**Movement & Partitioning**

No bioconcentration is expected because of the relatively high water solubility. Potential for mobility in soil is very high (Koc between 0 and 50). Partitioning from water to n-octanol is not applicable.

**Persistence and Degradability**

Biodegradation is not applicable.

**ECOTOXICITY**

Data for Component: **Calcium chloride**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, bluegill (*Lepomis macrochirus*): 8,350 - 10,650 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, water flea *Daphnia magna*: 759 - 3,005 mg/l

**Toxicity to Micro-organisms**

EC50; activated sludge, respiration inhibition: > 1,000 mg/l

Data for Component: **Potassium chloride**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 4,236 mg/l

**Aquatic Invertebrate Acute Toxicity**

EC50, water flea *Daphnia magna*, 24 h, immobilization: 590 mg/l

LC50, water flea *Ceriodaphnia dubia*, 96 h: 3,470 mg/l

Data for Component: **Sodium chloride**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

**Fish Acute & Prolonged Toxicity**

LC50, fathead minnow (*Pimephales promelas*): 10,610 mg/l

**Aquatic Invertebrate Acute Toxicity**

LC50, water flea *Daphnia magna*: 4,571 mg/l

**Toxicity to Micro-organisms**

EC50, OECD 209 Test; activated sludge, respiration inhibition: > 1,000 mg/l

### 13. Disposal Considerations

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Reclaimer. Landfill. Waste water treatment system. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

### 14. Transport Information

**TDG Small container**

NOT REGULATED

**TDG Large container**

NOT REGULATED

**IMDG**

NOT REGULATED

**ICAO/IATA**

NOT REGULATED

### 15. Regulatory Information

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

#### CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

#### Hazardous Products Act Information: CPR Compliance

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

#### Hazardous Products Act Information: WHMIS Classification

D2B	Eye or Skin Irritant
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#### Hazardous Products Act Information: Hazardous Ingredients

This product contains the following ingredients which are Controlled Products and/or are on the Ingredient Disclosure List (Canadian HPA Section 13 and 14).

Component	CAS #	Amount W/W
Calcium chloride	10043-52-4	> 83.0 - < 87.0 %

## 16. Other Information

#### Recommended Uses and Restrictions

A calcium chloride product - Snow and ice melting. Dust Control For industrial use. Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group.

#### Revision

Identification Number: 76455 / 1001 / Issue Date 2006.10.16 / Version: 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

#### Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
VOL/VOL	Volume/Volume

*The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.*