PANTHER INDUSTRIES INC.
BOX 698, DAVIDSON, SASK., CANADA S0G 1A0
PHONE: (306)567-2814 FAX: (306)567-2888

PRODUCT DATA

PRODUCT: Calcium Chloride High Test Fines

ITEM	%	METHOD
Calcium Chloride, min.	94.0	ASTM E449-84
Alkali Chlorides, max.	4.9	ASTM E449-84
Total magnesium, as MgCl,max.	0.4	ASTM E449-84
Heavy Meatal as Pb, max.	0.005	13964
Calcium Hydroxide, max.	0.20	ASTM E449-84
Sulphate (calculated as SO_4), max.	0.20	13964
Calcium Carbonate	0.20	13964
Iron, max	0.005	LDG-AM-82-73
Other Impurities, not including H_2O, max.	0.98	

SIEVE ANALYSIS
Based on STD TYLER MESH

ITEM	%
Passing #10 sieve	99
Passing #20 sieve	45
Passing #35 sieve	20
Bulk density	75 lbs/ft^3

MSDS # CALCIUM CHLORIDE-94%

PRODUCT INFORMATION

CHEMICAL NAME: Calcium Chloride

SYNONYM(S): High Test Fines, High Test Powder, High Test Beads,

CHEMICAL FAMILY: Inorganic salt

Product use: Calcium chloride is used to dehydrate natural gas with high sulfur content, gas from remote or offshore wells, or from wells with low flow rates.

MOLECULAR FORMULA: $CaCl_2$

SHIPPING NAME: Calcium Chloride

PIN - UN NUMBER: Not controlled

WHMIS: D2B

MANUFACTURER: The Dow Chemical Company Ltd.
P.O box 1012
Sarnia, Ontario
N7T 7K7
DOW Emergency Number: 780-998-8282 (Ft Saskatchewan, Alberta)
519-339-3711 (Sarnia, Ontario)
450-652-1000 (Varennes, Quebec)

SUPPLIER: Panther Industries Inc.
Box 628
Davidson, Sask. S0G 1A0

EMERGENCY TELEPHONE NUMBER: (306)567-2814

HAZARDOUS INGREDIENTS

INGREDIENTS:	WEIGHT %	C.A.S. REGISTRY NUMBER:
Calcium Chloride	94-97%	10043-52-4

OTHER INGREDIENTS

INGREDIENTS:	WEIGHT%	C.A.S. REGISTRY NUMBER:
Strontium Chloride	0-1%	10476-85-4
Sodium Chloride	1-2%	07647-14-5
Potassium Chloride	2-3%	07447-40-7
Water		07732-18-5

PHYSICAL DATA

PHYSICAL STATE: Solid.

PH: data to indicate the product is basic

ODOUR AND APPEARANCE: Odourless white to off white pellets.

ODOUR THRESHOLD: Not applicable

VAPOUR PRESSURE: <0.005 mmHg, at 20 ^{o}C.

VAPOUR DENSITY: Not applicable

BOILING POINT: 1670^{o}C

SOLUBILITY IN WATER: Very soluble

MELTING POINT: Approx. 772^{o}C, 1424^{o}F

SPECIFIC GRAVITY: 2.2

FIRE AND EXPLOSION DATA

CONDITIONS OF FLAMMABILITY: Not applicable.

MEANS OF EXTINGUISHING: This material does not burn. If exposed to fire from another

source, use suitable extinguishing agent for that fire.

FLASH POINT: Not applicable.

UPPER FLAMMABLE LIMIT: Not applicable.

LOWER FLAMMABLE LIMIT: Not applicable.

SPECIAL FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire area and deny unnecessary entry. Firefighters should wear positive-pressure self-contained breathing apparatus (SCBA) and full protective fire fighting clothing (included fire fighting helmet, coat, pants, boots, and gloves.)

EXPLOSION HAZARDS: **Hydrogen chloride is a hazardous combustion product at temperatures in excess of 1600 degrees Celsius.**

REACTIVITY DATA

STABILITY: Stable. Hygroscopic.

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION PRODUCTS: Does no decompose.

CONDITIONS TO AVOID: None known.

INCOMPATIBILITY: Corrosive to some metals. Corrosive when wet. Flammable hydrogen may be generated from contact with metals such as zinc or sodium. Avoid contact with sulfuric acid. Heat is generated when mixed with water. Spattering or boiling can occur.

HEALTH HAZARD DATA

INHALATION: Vapors are unlikely due to physical properties. Dust may cause irritation to upper respiratory tract. **Calcium Chloride has an LD_{50} of 1940 mg/kg oral mouse**

SKIN CONTACT: Short single exposure not likely to cause significant skin irritation. Prolonged or repeated exposure may cause skin irritation, even a burn. May cause more severe response if skin is damp or if material is confined to skin. May cause more severe response is skin is abraded (scratched or cut). When dissolving, the heat produced may cause more intense effects as well as thermal burns. Not classified as corrosive according to DOT. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts.

EYE CONTACT: Dusts may cause severe irritation with corneal injury, pellets may cause slight eye irritation. Effects may be slow to heal. When dissolving, the heat produced may cause more intense effects as well as thermal burns.

INGESTION: Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. Ingestion may cause gastrointestinal irritation or ulceration.

Toxicological data: Effects of chronic exposure: These effects are; Repeated exposure may cause irritation or even a burn to the skin, eyes and nasal cavity.

IRRITANCY: Slight.

MUTAGENICITY: Negative

SENSITIZATION TO PRODUCT: Not available.

REPRODUCTIVE TOXICITY: Not available.

ANIMAL TOXICITY DATA:

LD50 - 967-1668 mg/kg oral, rat.
>5000 mg/kg skin, rabbits

FIRST AID PROCEDURES

INHALATION: Remove to fresh air if effects occur. Consult a physician.

EYE CONTACT: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN CONTACT: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Give 2-4 glasses of water or milk and don’t induce vomiting unless directed to do so by medical personnel.

NOTE TO PHYSICIAN: If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

PREVENTATIVE MEASURES

RESPIRATORY PROTECTION: In dusty atmospheres, use an approved dust respirator. Atmospheric levels should be maintained below the exposure guideline.

EXPOSURE GUIDELINES: Calcium chloride: Dow IHG is 10 mg/m3
Sodium chloride: Dow IHG is 10 mg/m3
Potassium chloride: Dow IHG is 10 mg/m3

EYE AND FACE PROTECTION: Use safety glasses. For dusty operations or when handling solutions of the material, wear chemical goggles.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water and launder clothing before reuse. If hands are cut or scratched, use gloves impervious to this material even for brief exposures.

STORAGE REQUIREMENTS: Keep containers tightly closed when not in use. Store in a dry place. Protect from atmospheric moisture.

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

HANDLING: Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 80F, 27C)

ENVIRONMENTAL PROTECTION DATA

PROCEDURES TO BE FOLLOWED IN CASE OF A LEAK OR SPILL: Contain spill. Shovel and sweep up spill and place in a suitable and properly labelled container. Flush residue with large amounts of water. Keep contaminated water from entering sewers and water courses.

WASTE DISPOSAL: All disposal methods must be in compliance with all Federal, State/Provincial and local laws and regulations.

AQUATIC TOXICITY: Material is practically non-toxic to aquatic organisms on an acute bases (LC50/EC50 > 100 mg/L in most sensitive species).

PREPARATION INFORMATION

MSDS PREPARED BY: Technical Department
Panther Industries Inc.
Davidson, Sask.
Ph. (306) 567-2814

DATE PREPARED/REVISED: Feb 17 2004

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REFERENCES:
1. Patty's Industrial Hygiene and Toxicology 3rd Ed.1981 by Clayton & Clayton John Wiley & Sons, New York.
2. Manufacturer's MSDS.