

## SODIUM CYANIDE

7. A "Biohazard" bag for disposal of bloody/contaminated equipment.
8. A set of cyanide instructions on first aid and medical treatment.

NOTE: Amyl nitrite ampoules and Medical Treatment Supplies can be purchased through local pharmacies with a physician's prescription.

### MEDICAL TREATMENT PROCEDURE

1. Sodium nitrite: Adult - 10 mL of 3% solution (300 mg)  
Draw solution from the ampoule and inject slowly over 4-5 minutes (2 to 2.5 mL/minute). As soon as practical, monitor blood pressure and continue checking pulse. Slow the rate of injection if hypotension (low blood pressure) occurs.

2. Sodium thiosulfate: Adult - 50 mL of 25% solution (12.5 grams)  
Follow sodium nitrite with sodium thiosulfate injected at a rate of 2.5 mL/minute (10-20 minutes).

The total time for injection of these initial doses of both components at the recommended rates is lengthy, approximately 20-25 minutes.

Consider the body weight and condition of the patient when treating a cyanide exposed patient with sodium nitrite. Both amyl nitrite and sodium nitrite produce methemoglobin, which reduces the oxygen carrying capacity of the blood. Methemoglobinemia is potentially harmful when methemoglobin levels exceed 20-30% (See Antidotal Effects Section).

If symptoms persist or recur after the initial treatment, repeat the antidote at one half the original doses one hour after the original administration. Monitor methemoglobin levels when practical in every patient treated with the intravenous antidote.

### AVOID OVER-TREATMENT.

The above sodium nitrite injection discussed in the Medical Treatment Procedure Section is about one-third the lethal dose, so care should be taken to avoid excessive use. It is not essential that full quantities of antidote be given just because treatment was started. Should injection be stopped for any reason, keep track of the amount administered in case treatment needs to be restarted.

### ANTIDOTAL EFFECTS

Nitrites can produce hypotension through peripheral vasodilatation (widening of the blood vessels). Methemoglobin formation, although considered a therapeutic effect, may cause symptoms if levels exceed 20-30%. Recommended intravenous doses of sodium nitrite discussed in the Medical Treatment Procedure Section usually produce methemoglobin levels under 20%. Headache, nausea, vomiting, and syncope (fainting) may follow nitrite administration, and syncope may occur if the patient is not lying down. While it is important to be aware of the effects from

## SODIUM CYANIDE

nitrite therapy, there have been no long-lasting effects associated with this treatment regimen for cyanide exposure in DuPont's experience and knowledge.

### RECOVERY AND DISPOSITION

For most accidental poisonings, patients can be revived in a few minutes using oxygen and amyl nitrite with complete recovery within a few hours.

If necessary, the patient should be monitored for 24-48 hours. Any patient whose symptoms require the use of IV antidote should be considered for admittance to an intensive care unit.

Observe for return of symptoms. Monitor methemoglobin levels, blood pH and oxygenation through arterial blood gas analysis. Calculate anion gap from serum electrolytes. Cyanide poisoning causes lactate accumulation and an anion gap metabolic acidosis.

Delayed neurotoxic effects are not expected consequences of cyanide exposure although neurotoxic effects may occur if hypoxia (oxygen deficiency) was prolonged or occurred following massive cyanide exposure.

In the presence of smoke inhalation that can occur during fires, withholding amyl nitrite or sodium nitrite administration should be considered because of the potential for high carboxyhemoglobin levels. However, administration of oxygen and possibly sodium thiosulfate should be continued.

## FIRE FIGHTING MEASURES

### Flammable Properties

Will not burn.

Follow appropriate National Fire Protection Association (NFPA) codes.

Sodium Cyanide may not be completely destroyed in an ordinary fire involving combustible materials such as paper or wood. While sodium cyanide does not support combustion, it can oxidize in a fire.

### Extinguishing Media

Use water on fires near cyanide but minimize the amount of water if containers are opened or burned to avoid cyanide runoff (see "Incompatibility with Other Materials" and "Fire Fighting Instructions"). DO NOT use carbon dioxide (CO<sub>2</sub>) on wet cyanide where carbonic acid (H<sub>2</sub>O + CO<sub>2</sub>) could release cyanide.

## SODIUM CYANIDE

### Fire Fighting Instructions

Sodium Cyanide dissolves readily in water; therefore, cyanide solution runoff may occur if containers are opened or burned. Runoff should be contained to avoid environmental or safety problems. Contained cyanide solution can be detoxified with hypochlorite. In some cases it may be desirable to let a fire burn out by itself since sodium cyanide will not normally be affected by the fire.

## ACCIDENTAL RELEASE MEASURES

### Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

### Spill Clean Up

Shovel and sweep up spilled material into a covered container or plastic bag pending transfer. Cover and keep spillage dry. Flush spill area with a dilute solution of sodium hypochlorite or calcium hypochlorite to destroy the cyanide. Call DuPont for guidance. Comply with Federal, State, and local regulations reporting releases. The EPA Reportable Quantity (RQ) is 10 pounds.

## HANDLING AND STORAGE

### Handling (Personnel)

Emergency planning and training are needed before beginning work with cyanide since prompt treatment is essential in cases of cyanide poisoning. Always have Cyanide Antidote Kits on hand. Do not breathe dust, mist, or cyanide gas. Do not get in eyes. Avoid contact with skin and clothing. Do not carry foodstuffs, beverages, or tobacco where contamination with cyanide is possible. Wash thoroughly after handling. Wash contaminated clothing before reuse.

### Storage

Store in properly labeled containers in dry, ventilated, secured areas. Keep containers closed and contents dry. Do not store with acids or acid salts, containers with water or weak alkalis, or oxidizing agents. Do not handle or store food, beverages, or tobacco in cyanide areas. Do not store near combustibles or flammables because subsequent fire

## SODIUM CYANIDE

fighting with water could lead to cyanide solution runoff.  
If legal, do not store under sprinkler systems.

### EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Engineering Controls

Use sufficient ventilation to keep employee exposure below recommended limits.

#### Personal Protective Equipment

Recommended minimum protection: Chemical splash goggles and rubber gloves (butyl or neoprene preferred).

Have available and use as appropriate: face shield; rubber suits, aprons, and boots; NIOSH approved disposable air purifying respirator with appropriate particulate filter; self-contained breathing air supply (in case of emergency); hydrogen cyanide detector; First Aid and Medical Treatment supplies, including oxygen resuscitators.

#### # Exposure Guidelines

##### Exposure Limits

##### Sodium Cyanide

PEL (OSHA)	: 5 mg/m <sup>3</sup> , as CN, 8 Hr. TWA, Skin
TLV (ACGIH)	: Ceiling 5 mg/m <sup>3</sup> , as CN, Skin
AEL * (DuPont)	: 5 mg/m <sup>3</sup> , 15 minute TWA, as CN, Skin

\* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

#### Exposure Guideline Comments

The "Skin" notation in the Exposure Limits Section indicates that liquid or vapor may penetrate the skin (especially if the skin is broken). Control of vapor, dust, and mist inhalation alone may not be sufficient to prevent an excessive dose.

### PHYSICAL AND CHEMICAL PROPERTIES

#### Physical Data

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## SODIUM CYANIDE

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Boiling Point : 1496 C (2725 F) @ 760 mm Hg  
Vapor Pressure : Negligible  
Vapor Density : Nil  
Melting Point : 564 C (1047 F)  
Solubility in Water : 37 WT% @ 20 C (68 F)  
pH : 11-12

The pH listed above is typical for 5-25 % solutions with no pH adjustment.

Form : Solid, Granular, Briquettes.  
Color : White.  
Specific Gravity : 1.6  
Bulk Density (Packed) : 50-55 lb/cu ft

Solid cyanide has no odor, but it can have a slight ammonia and/or hydrogen cyanide odor if damp.

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## STABILITY AND REACTIVITY

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### Chemical Stability

Very stable when dry.

### Incompatibility with Other Materials

Large amounts of poisonous, flammable hydrogen cyanide (HCN) gas will be evolved from contact with acids. Reacts violently with strong oxidizing agents when heated. Water or weak alkaline solutions can produce dangerous amounts of hydrogen cyanide in confined areas.

### Decomposition

Moisture will cause slow decomposition, releasing poisonous hydrogen cyanide and ammonia gases.

### Polymerization

Polymerization will not occur.

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## TOXICOLOGICAL INFORMATION

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## SODIUM CYANIDE

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### Animal Data

#### SODIUM CYANIDE:

Oral LD50: 15 mg/kg in rats  
Dermal LD50: 11.28-14.63 mg/kg in rabbits  
Inhalation LC50: no information found but considered to  
be highly toxic as CN by inhalation

Solid Sodium cyanide has not been tested for skin and eye irritation, or for skin sensitization.

NOTE: Administration of Sodium cyanide to rats, cats, or dogs by the intravenous or intraperitoneal routes resulted in rapid respiration, confusion, unconsciousness, vomiting, decreased blood pressure, cardiac rate changes, seizures and respiratory failure.

Eye: As with other routes of exposure, systemic toxicity and death is possible from contamination of the eye; LD50 dose in rabbits is approximately 5 mg/kg.

Sodium cyanide applied to the skin of rabbits produced tremors, retrocolic spasms, convulsions, abnormal breathing patterns, and prostration.

Ingestion: Repeated administration of cassava diets containing unspecified cyanide ion caused decreased thyroid activity and kidney changes. Long-term administration of 0.5, 1.0, or 2.0 mg/kg/day to dogs produced unspecified acute intoxication symptoms and increased numbers of red blood cells and decreased proteins were observed at doses greater than 1.0 mg/kg/day. Central nervous system changes occurred in all treated dogs.

No animal test reports are available to define carcinogenic hazards of Sodium cyanide. Limited reproductive studies do not suggest effects. Some tests have shown the potential for developmental toxicity but only at exposure levels producing toxic effects in the adult animal.

Sodium cyanide does not produce genetic damage in bacterial cell cultures, and has not been tested in animals.

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## ECOLOGICAL INFORMATION

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### Ecotoxicological Information

#### AQUATIC TOXICITY:

96 hour LC50 - Fathead minnows: 0.43-0.66 mg/L.

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**SODIUM CYANIDE**

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Extremely toxic.

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**DISPOSAL CONSIDERATIONS**

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Waste Disposal

This material may be a RCRA Hazardous waste. Do not flush cyanide into sewers which may contain an acid. Detoxify with dilute sodium hypochlorite, hydrogen peroxide, or calcium hypochlorite. Comply with Federal, State, and local regulations on disposal methods used to achieve the constituent based treatment standard, if permitted; or transfer to a licensed disposal contractor.

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**TRANSPORTATION INFORMATION**

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Shipping Information

DOT  
Proper Shipping Name : SODIUM CYANIDE  
Hazard Class : 6.1  
I.D. No. (UN/NA) : UN1689  
DOT Label(s) : TOXIC  
Special Information : MARINE POLLUTANT  
Packing Group : I

DOT/IMO  
Proper Shipping Name : SODIUM CYANIDE, SOLID  
Hazard Class : 6.1  
UN No. : 1689  
DOT/IMO Label : TOXIC  
Special Information : MARINE POLLUTANT  
Packing Group : I

Reportable Quantity : 10 lb (4.54 kg)

Shipping Containers

Steel Drums : 50 kg, 100 kg

"CYANO-DOL" Railcars and Trucks  
Excel I and Excel II Trucks  
Hopper Railcars  
"FLO-BINS" (3,000 lb. net; 3,600 lb. gross)  
Bag in a Box (1,000 kg./2,200 lb.)

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**SODIUM CYANIDE**

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Tuff Paks: 48, 20 kg bags in a box (960 kg or 2112 lbs).

Shipping Information -- Canada

TDG  
Proper Shipping Name : SODIUM CYANIDE SOLID  
PIN No. : UN 1689  
TDG Class : 6.1 (9.2)  
TDG Packing Group : I

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**REGULATORY INFORMATION**

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U.S. Federal Regulations

TSCA Inventory Status : Reported/Included.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes  
Chronic : No  
Fire : No  
Reactivity : Yes  
Pressure : No

HAZARDOUS CHEMICAL LISTS

SARA Extremely Hazardous Substance: Yes  
CERCLA Hazardous Substance : Yes  
SARA Toxic Chemical : Yes

Canadian Regulations

WHMIS Classification:

CLASS D Division 1 Subdivision A - Very Toxic Material/Acute  
Lethality.

CLASS D Division 2 Subdivision B - Toxic Material. Skin or Eye  
Irritant.

This product has been classified in accordance with the hazard  
criteria of the CPR and the MSDS contains all the information  
required by the CPR.

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**OTHER INFORMATION**

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NFPA, NPCA-HMIS

NFPA Rating  
Health : 3  
Flammability : 0  
Reactivity : 1



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**SODIUM CYANIDE**

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NPCA-HMIS Rating

Health	: 3
Flammability	: 0
Reactivity	: 1

Personal Protection rating to be supplied by user depending on use conditions.

Additional Information

For further information, see DuPont Cyanide Storage and Handling Bulletin.

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The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Responsibility for MSDS

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CHEMICALS  
DuPont Canada Inc.  
7070 Mississauga Rd.  
Mississauga, Ontario, L5M 2H3  
(905) 821-5369.

# Indicates updated section.

End of MSDS

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**SODIUM SULPHATE**

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\* M S D S \*

\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

**\*\*\* IDENTIFICATION \*\*\***

MSDS RECORD NUMBER : 2428877

PRODUCT NAME(S) : SODIUM SULPHATE

DATE OF MSDS : 1998-02-16

CURRENCY NOTE : This MSDS was provided to CCOHS in  
electronic form on 2000-09-27

**\*\*\* SUPPLIER/DISTRIBUTOR INFORMATION \*\*\***

SUPPLIER/DISTRIBUTOR : CANADA COLORS AND CHEMICALS LIMITED

ADDRESS : 80 Scarsdale Road  
Don Mills Ontario  
Canada M3B 2R7  
Telephone: 416-449-7750

EMERGENCY TELEPHONE NO. : 416-444-2112

**SUPPLIER/DISTRIBUTOR NOTE :**

For further information about this product please contact the Canada  
Colors Customer Service Department at 416-449-7750.

**\*\*\* MATERIAL SAFETY DATA \*\*\***

MATERIAL SAFETY DATA SHEET : 00001598

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CANADA COLORS AND CHEMICALS LI  
80 SCARSDALE ROAD  
DON MILLS, ONTARIO M3B 2R7  
(416) 449-7750

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Product: SODIUM SULPHATE

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**SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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MANUFACTURER..... SASKATCHEWAN MINERALS  
P.O. BOX 120  
CHAPLIN, SASKATCHEWAN  
CANADA  
S0H 0V0

PRODUCT NAME.....

PRODUCT CODE.....

CHEMICAL FORMULA..... Na2SO4.

MOLECULAR WEIGHT..... 142.04.

CHEMICAL FAMILY..... INORGANIC.

MATERIAL USE..... REFER TO TECHNICAL LITERATURE.

EMERGENCY PHONE NO..... (416)-444-2112.

## SECTION 02: COMPOSITION/INFORMATION ON INGREDIENTS

\*NONE

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ROUTE OF ENTRY:.....
SKIN CONTACT..... MILD IRRITANT.
SKIN ABSORPTION..... N.AV.
EYE CONTACT..... IRRITANT.
INHALATION..... CAUSES IRRITATION OF THE RESPIRATORY TRACT.
INGESTION..... SLOWLY ABSORBED FROM THE ALIMENTARY TRACT.
                     BECAUSE OF OSMOTIC ACTIVITY, IT WILL DRAW
                     WATER INTO THE LUMEN OF THE BOWEL AND, IN
                     SUFFICIENT QUANTITY, MAY CAUSE PURGING AND
                     FLUID LOSS.
EFFECTS OF ACUTE EXPOSURE..... DUST OR VAPORS MAY BE IRRITATING TO SKIN,
                     EYES, AND RESPIRATORY TRACT.
EFFECTS OF CHRONIC EXPOSURE..... NO RELEVANT INFORMATION FOUND.
    INHALATION, CHRONIC..... N.AV.

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INSTRUCTIONS:..... FLUSH EYES WITH LARGE AMOUNTS OF RUNNING WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART TO ENSURE RINSING OF THE ENTIRE SURFACE OF THE EYE AND LIDS WITH WATER.FLUSH CONTAMINATED SKIN WITH PLENTY OF WATER.IN CASE OF INHALATION, REMOVE TO FRESH AIR.IN CASE OF INGESTION, GIVE LARGE QUANTITIES OF WATER IF CONSCIOUS.CONSULT A PHYSICIAN.

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T.D.G. FLAM. CLASS.....
FLAMMABILITY..... NOT FLAMMABLE.
IF YES, UNDER WHICH.....
CONDITIONS?
EXTINGUISHING MEDIA..... CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL
FOAM, WATER FOG. WATER FOG.
SPECIAL PROCEDURES..... FIREFIGHTERS SHOULD WEAR SELF-CONTAINED
BREATHING APPARATUS.
FLASH POINT (C), METHOD..... N.AV.

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SODIUM SULPHATE

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AUTO IGNITION TEMPERATURE..... N.AV.
UPPER FLAMMABLE LIMIT (% BY..... N.AV.
VOL.)
LOWER FLAMMABLE LIMIT (% BY..... N.AV.
VOL.)
EXPLOSION DATA.....
    EXPLOSIVE POWER..... N.AV.
    RATE OF BURNING..... N.AV.
SENSITIVITY TO STATIC..... N.AV.
DISCHARGE
    SENSITIVITY TO IMPACT..... N.AV.
HAZARDOUS COMBUSTION PRODUCTS..... BURNING CAN PRODUCE,. OXIDES OF SODIUM.
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SECTION 06: ACCIDENTAL RELEASE MEASURES

LEAK/SPILL..... COLLECT AND CONTAIN IN SUITABLE DISPOSAL  
CONTAINERS.

SECTION 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND..... EQUIPMENT	AVOID ALL SKIN CONTACT.AVOID GETTING IN EYES.USE ADEQUATE VENTILATION.KEEP CONTAINERS CLOSED OR SEALED.MAINTAIN A GOOD PERSONAL HYGIENE.
STORAGE NEEDS.....	KEEP THE CONTAINER TIGHTLY CLOSED WHEN NOT IN USE.STORE AWAY FROM INCOMPATIBLE MATERIALS.STORE IN A COOL AND WELL-VENTILATED AREA.

SECTION 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

GLOVES/ TYPE.....	RUBBER.
RESPIRATORY/TYPE.....	USE NIOSH OR MSHA APPROVED SELF-CONTAINED BREATHING APPARATUS IN HIGH CONCENTRATIONS.
EYE/TYPE.....	SAFETY GLASSES. GOGGLES.
FOOTWEAR/TYPE.....	BOOTS.
CLOTHING/TYPE.....	WEAR IMPERVIOUS PROTECTIVE CLOTHING.
OTHER/TYPE.....	N.AV.
ENGINEERING CONTROLS.....	VENTILATE ADEQUATELY.

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## SODIUM SULPHATE

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### SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

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PHYSICAL STATE..... SOLID.  
ODOUR..... NO ODOUR.  
ODOUR THRESHOLD..... N.AV.  
VAPOUR PRESSURE (MMHG)..... N.AP.  
VAPOUR DENSITY (AIR=1)..... N.AP.  
EVAPORATION RATE..... N.AP.  
BOILING POINT..... 1100 (C). DECOMPOSES.  
PH..... 8.3.  
SPECIFIC GRAVITY (WATER=1)..... 2.7.  
SOLUBILITY IN WATER (% W/W)..... 15.9.  
COEFFICIENT OF WATER/OIL DIST..... N.AV.

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### SECTION 10: STABILITY AND REACTIVITY

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CHEMICAL STABILITY:.....  
YES..... YES.  
NO, WHICH CONDITIONS?.....  
COMPATABILITY WITH OTHER.....  
SUBSTANCES:  
YES.....  
NO, WHICH ONES?..... ALUMINUM.  
REACTIVITY CONDITIONS?..... VIOLENT EXPLOSIONS WILL OCCUR WHEN SODIUM  
SULPHATE IS MELTED WITH ALUMINUM OR  
MAGNESIUM.  
HAZARDOUS PRODUCTS OF..... SEE HAZARDOUS COMBUSTION PRODUCTS.  
DECOMPOSITION

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### SECTION 11: TOXICOLOGICAL INFORMATION

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EXPOSURE LIMIT OF MATERIAL..... SEE SECTION 02.  
LC 50 OF MATERIAL, SPECIES &..... N.AV.  
ROUTE  
LD 50 OF MATERIAL, SPECIES &..... 5989 MG/KG. (ORAL-MOUSE).  
ROUTE  
CARCINOGENICITY OF MATERIAL..... NONE.  
TERATOGENICITY:..... SODIUM SULPHATE IS NOT INCLUDED ON THE  
IARC, NTP, ACGIH LISTS OR ON NIOSH'S  
SUBFILE.  
REPRODUCTIVE EFFECTS..... CITED IN RTECS FROM INJECTABLE DOSES OF 60  
MG/KG IN MICE.  
IRRITANCY OF MATERIAL..... SEE SECTION 03.  
SENSITIZING CAPABILITY OF..... N.AV.  
MATERIAL  
SYNERGISTIC MATERIALS..... NONE.

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**SODIUM SULPHATE**

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**SECTION 12: ECOLOGICAL CONSIDERATIONS**

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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WASTE DISPOSAL..... IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL  
AND FEDERAL REGULATIONS.

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**SECTION 14: TRANSPORT INFORMATION**

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UN NUMBER..... N.AP.  
TDG CLASSIFICATION..... NOT REGULATED.  
PACKING GROUP..... N.AP.  
SPECIAL SHIPPING INSTRUCTIONS..... N.AP.

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**SECTION 15: REGULATORY INFORMATION**

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WHMIS CLASSIFICATION..... THIS IS NOT A CONTROLLED PRODUCT.  
CPR COMPLIANCE..... THIS PRODUCT HAS BEEN CLASSIFIED IN  
ACCORDANCE WITH THE HAZARD CRITERIA OF THE  
CPR AND THE MSDS CONTAINS ALL THE  
INFORMATION  
  
REQUIRED BY THE CPR.

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**SECTION 16: OTHER INFORMATION**

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N.AV.=NOT AVAILABLE.....  
N.AP.=NOT APPLICABLE.....  
PREPARED BY..... Regulatory Affairs  
DATED..... 02161998

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**VAR SOL**

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\* M S D S \*

\* Canadian Centre for Occupational Health and Safety \*

\* \* \* \* \* Issue : 2001-1 (February, 2001) \*

\*\*\* IDENTIFICATION \*\*\*

MSDS RECORD NUMBER : 2429254  
PRODUCT NAME(S) : VAR SOL DX 3641  
DATE OF MSDS : 1999-07-20  
CURRENCY NOTE : This MSDS was provided to CCOHS in  
electronic form on 2000-09-27

\*\*\* SUPPLIER/DISTRIBUTOR INFORMATION \*\*\*

SUPPLIER/DISTRIBUTOR : CANADA COLORS AND CHEMICALS LIMITED  
ADDRESS : 80 Scarsdale Road  
Don Mills Ontario  
Canada M3B 2R7  
Telephone: 416-449-7750  
EMERGENCY TELEPHONE NO. : 416-444-2112  
SUPPLIER/DISTRIBUTOR NOTE :  
For further information about this product please contact the Canada  
Colors Customer Service Department at 416-449-7750.

MATERIAL SAFETY DATA SHEET : 00004966

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CANADA COLORS AND CHEMICALS LI  
80 SCARSDALE ROAD  
DON MILLS, ONTARIO M3B 2R7  
(416) 449-7750

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Product: VAR SOL DX 3641

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**SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

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MANUFACTURER..... VAN WATERS & ROGERS LTD.  
9800 VAN HORNE WAY  
RICHMOND, B.C.  
CANADA  
V6X 1W5

PRODUCT NAME:.....  
PRODUCT CODE:.....  
CHEMICAL FORMULA..... N.AV.  
MOLECULAR WEIGHT..... N.AV.  
CHEMICAL FAMILY..... N.AV.  
MATERIAL USE..... REFER TO TECHNICAL LITERATURE.

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**VAR SOL**

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EMERGENCY PHONE NO..... (416)-444-2112.

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**SECTION 02: COMPOSITION/INFORMATION ON INGREDIENTS**

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%	CAS / TLV	LD/50, ROUTE, SPECIES	LC/50, ROUTE, SPECIES
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NAPHTHA, HYDROTREATED LIGHT			
100	64742-47-8	5000 MG/KG (ORL-RAT)	N.AV.
	---	3000 MG/KG	
		(DERMAL-RABBIT)	

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**SECTION 03: HAZARDS IDENTIFICATION**

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ROUTE OF ENTRY:.....

SKIN CONTACT..... IRRITANT.

SKIN ABSORPTION..... N.AV.

EYE CONTACT..... IRRITANT.

INHALATION..... HARMFUL IF INHALED.

INGESTION..... HARMFUL IF SWALLOWED.

EFFECTS OF ACUTE EXPOSURE..... SEE ABOVE.

EFFECTS OF CHRONIC EXPOSURE..... NONE KNOWN.

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**SECTION 04: FIRST AID MEASURES**

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INSTRUCTIONS:..... IN CASE OF INHALATION, REMOVE TO FRESH AIR.GET IMMEDIATE MEDICAL ATTENTION.FLUSH EYES WITH LARGE AMOUNTS OF RUNNING WATER FOR AT LEAST 15 MINUTES. HOLD EYELIDS APART TO ENSURE RINSING OF THE ENTIRE SURFACE OF THE EYE AND LIDS WITH WATER.IN CASE OF SKIN CONTACT.WASH SKIN WITH LARGE AMOUNTS OF RUNNING WATER, AND SOAP IF AVAILABLE, FOR 15 MINUTES.IF IRRITATION PERSISTS, GET MEDICAL ATTENTION.WASH CLOTHING BEFORE REUSE.IN CASE OF INGESTION:. DO NOT INDUCE VOMITING.GET IMMEDIATE MEDICAL ATTENTION.DO NOT GIVE ANYTHING BY MOUTH TO A CONVULSING OR UNCONSCIOUS PERSON.



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**VAR SOL**

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**SECTION 05: FIRE FIGHTING MEASURES**

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T.D.G. FLAM. CLASS..... NOT REGULATED.  
FLAMMABILITY..... SEE FLASH POINT.  
IF YES, UNDER WHICH.....  
CONDITIONS?  
EXTINGUISHING MEDIA..... CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL  
FOAM, WATER FOG. WATER SPRAY.  
SPECIAL PROCEDURES..... DO NOT USE A JET OF WATER OR FOAM.WEAR  
FULL PROTECTIVE EQUIPMENT INCLUDING A  
SELF-CONTAINED BREATHING APPARATUS.USE  
WATER-SPRAY TO KEEP CONTAINERS COOL.  
  
FLASH POINT (C), METHOD..... 63.  
AUTO IGNITION TEMPERATURE..... N.AV.  
UPPER FLAMMABLE LIMIT (% BY..... 13 %.  
VOL.)  
LOWER FLAMMABLE LIMIT (% BY..... 2.1.  
VOL.)  
EXPLOSION DATA.....  
EXPLOSIVE POWER..... N.AV.  
RATE OF BURNING..... N.AV.  
SENSITIVITY TO STATIC..... N.AV.  
DISCHARGE  
SENSITIVITY TO IMPACT..... N.AV.  
UNUSUAL FIRE AND EXPLOSION..... NONE KNOWN.  
HAZARDS  
HAZARDOUS COMBUSTION PRODUCTS..... N.AV.

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**SECTION 06: ACCIDENTAL RELEASE MEASURES**

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LEAK/SPILL..... COMBUSTIBLE LIQUID.KEEP AWAY FROM HEAT OR  
FLAME. ABSORB WITH AN INERT MATERIAL SUCH  
AS SAND, SOIL OR VERMICULITE; SWEEP UP AND  
DISPOSE OF IN ACCORDANCE TO ALL GOVERNMENT  
REGULATIONS. ELIMINATE IGNITION  
SOURCES.SCOOP UP USED ABSORBENT INTO  
DRUMS.PREVENT RUNOFF INTO DRAINS, SEWERS,  
AND OTHER WATERWAYS.REPORT AS PER  
REGULATORY REQUIREMENTS.

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**SECTION 07: HANDLING AND STORAGE**

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HANDLING PROCEDURES AND..... KEEP CONTAINERS CLOSED WHEN NOT IN  
EQUIPMENT USE.AVOID CONTACT WITH EYES, SKIN, AND  
CLOTHING.WASH THOROUGHLY AFTER HANDLING.  
STORAGE NEEDS..... STORE IN A COOL, DRY, WELL VENTILATED  
AREA, AWAY FROM HEAT AND IGNITION  
SOURCES.STORE AWAY FROM INCOMPATIBLE  
MATERIALS.KEEP THE CONTAINER TIGHTLY

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**VAR SOL**

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CLOSED WHEN NOT IN USE.

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**SECTION 08: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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GLOVES/ TYPE.....	WEAR IMPERVIOUS GLOVES.
RESPIRATORY/TYPE.....	ATMOSPHERIC LEVELS SHOULD BE MAINTAINED BELOW THE EXPOSURE GUIDELINE. WHEN RESPIRATORY PROTECTION IS REQUIRED FOR CERTAIN OPERATIONS, USE AN NIOSH APPROVED AIR-PURIFYING RESPIRATOR.
EYE/TYPE.....	CHEMICAL SAFETY GOGGLES.
FOOTWEAR/TYPE.....	SAFETY SHOES.
CLOTHING/TYPE.....	FULL COVER CLOTHING.
OTHER/TYPE.....	EYE BATH AND SAFETY SHOWER.
ENGINEERING CONTROLS.....	GENERAL (MECHANICAL) ROOM VENTILATION IS EXPECTED TO BE SATISFACTORY.

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**SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES**

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PHYSICAL STATE.....	CLEAR. LIQUID.
ODOUR.....	MILD ODOUR.
ODOUR THRESHOLD.....	200 PPM.
VAPOUR PRESSURE (MMHG).....	0.75.
VAPOUR DENSITY (AIR=1).....	5.4.
EVAPORATION RATE.....	0.1.
BOILING POINT.....	186 (C).
PH.....	N.AV.
SPECIFIC GRAVITY (WATER=1).....	0.79 (20(C)).
SOLUBILITY IN WATER (% W/W).....	INSOLUBLE.
COEFFICIENT OF WATER/OIL DIST.....	N.AV.

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**SECTION 10: STABILITY AND REACTIVITY**

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CHEMICAL STABILITY:.....	
YES.....	YES.
NO, WHICH CONDITIONS?.....	
COMPATABILITY WITH OTHER.....	
SUBSTANCES:	
YES.....	
NO, WHICH ONES?.....	OXIDIZING AGENTS.
REACTIVITY CONDITIONS?.....	AVOID EXCESSIVE HEAT, OPEN FLAMES AND ALL IGNITION SOURCES.
HAZARDOUS PRODUCTS OF.....	NONE KNOWN.
DECOMPOSITION	
HAZARDOUS POLYMERIZATION.....	WILL NOT OCCUR.

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**VAR SOL**

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**SECTION 11: TOXICOLOGICAL INFORMATION**

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EXPOSURE LIMIT OF MATERIAL..... NOT ESTABLISHED.  
LC 50 OF MATERIAL, SPECIES &..... NONE FOUND.  
ROUTE  
LD 50 OF MATERIAL, SPECIES &..... N.AV.  
ROUTE  
CARCINOGENICITY OF MATERIAL..... N.AV.  
REPRODUCTIVE EFFECTS..... N.AV.  
IRRITANCY OF MATERIAL..... SEE SECTION 03.  
SENSITIZING CAPABILITY OF..... N.AV.  
MATERIAL  
SYNERGISTIC MATERIALS..... N.AV.

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**SECTION 12: ECOLOGICAL CONSIDERATIONS**

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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WASTE DISPOSAL..... IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL  
AND FEDERAL REGULATIONS.

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**SECTION 14: TRANSPORT INFORMATION**

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UN NUMBER..... N.AP.  
TDG CLASSIFICATION..... NOT REGULATED.  
PACKING GROUP..... N.AP.  
SPECIAL SHIPPING INSTRUCTIONS..... N.AP.

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**SECTION 15: REGULATORY INFORMATION**

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WHMIS CLASSIFICATION..... B3. D2B.  
CPR COMPLIANCE..... THIS PRODUCT HAS BEEN CLASSIFIED IN  
ACCORDANCE WITH THE HAZARD CRITERIA OF THE  
CPR AND THE MSDS CONTAINS ALL THE  
INFORMATION REQUIRED BY THE CPR.

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**VAR SOL**

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**SECTION 16: OTHER INFORMATION**

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N.AV.=NOT AVAILABLE.....  
N.AP.=NOT APPLICABLE.....  
PREPARED BY..... Regulatory Affairs  
DATED..... 07201999