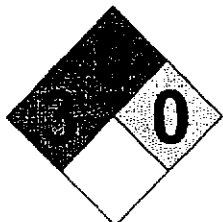


Annexe XI

Fiche signalétique des réactifs



FLUOROSILICIC ACID

UN 1778

Shipping Name: Fluorosilicic acid

Other Names: FKS

Fluosilicic acid

Hexafluosilicic Acid

Silicofluoric acid

Sand acid

Hydrogen hexafluorosilicate



WARNING! • POISON! BREATHING THE VAPORS CAN KILL YOU! SKIN AND EYE CONTACT CAUSES SEVERE BURNS AND BLINDNESS!

- Firefighting gear (including SCBA) does not provide adequate protection. If exposure occurs, remove and isolate gear immediately and thoroughly decontaminate personnel

Hazards:

- Vapors are heavier than air and will collect and stay in low areas
- Container may BLEVE when exposed to fire
- Decomposition products upon heating include toxic hydrogen fluoride
- Corrosive to glass and stoneware

Awareness and Operational Level Training Response:

- Do not put yourself in danger by entering a contaminated area to rescue a victim
- Stay upwind and uphill
- Determine the extent of the problem
- Isolate the area of release or fire and deny entry
- For container exposed to fire evacuate the area in all directions because of the risk of BLEVE
- Evacuate or shelter in place the immediate area and downwind for a large release
- Notify local health and fire officials and pollution control agencies
- If material or contaminated runoff enters waterways, notify downstream users of potentially contaminated water

Description:

- Colorless to straw colored liquid
- Unpleasant sour odor
- Soluble in water with the release of heat
- Nonflammable
- Vapors are heavier than air and will collect and stay in low areas
- Freezes at 63° F

Operational Level Training Response:

RELEASE, NO FIRE:

- Stop the release if it can be done safely from a distance
- Prevent material and runoff from entering sewers and waterways if it can be done safely well ahead of the release
- Use large amounts of water well away from the material to disperse vapors - contain runoff
- Ventilate confined area if it can be done without placing personnel at risk
- If in a building, evacuate building and confine vapors by closing doors and shutting down HVAC systems

FIRE:

- Material does not burn; fight surrounding fire with an agent appropriate for the burning material
- Cool exposed containers with large quantities of water from unattended equipment or remove intact containers if it can be done safely
- If cooling streams are ineffective (venting sound increases in volume and pitch, tank discolors or shows any signs of deforming), withdraw immediately to a secure location

First Aid:

- Do not put yourself in danger by entering a contaminated area to rescue a victim
- Provide Basic Life Support/CPR as needed
- Decontaminate the victim as follows:
 - ♦ Inhalation - remove the victim to fresh air and give oxygen if available
 - ♦ Skin - remove and isolate contaminated clothing (including shoes) and wash skin with soap and large volumes of water for 15 minutes
 - ♦ Eye - rinse eyes with large volumes of water or saline for 15 minutes
 - ♦ Swallowed - do not make the victim vomit
- Seek medical attention
- Toxic effects may be delayed
- For skin burns decontaminate with water and apply a clean dry dressing
- Note to physician: skin burns can be treated with calcium gluconate gel

CAS: 16961-83-4

Gary O. Pittman
Rt. 1 Box 85-A
Jennings, FL 32053

November 18, 1998

RE: Fluoridating drinking water with fluorosilicic acid
(H_2SiF_6)/sodium fluorosilicate (Na_2SiF_6)

Dear Congressman or Senator:

I worked in the phosphate fertilizer industry for about twentyone years, my last position was supervising onethird of the evaporation and purification processes at the Occidental Chemical Corporation, Swift Creek Chemical Complex. That position required a thorough knowledge of almost every facet of producing phosphoric acid for fertilizer and animal feed supplement.

Today, I am disabled and suffer from toxic brain syndrome, emphysema, heart arrhythmias and other health problems due to chemical exposure. Many of my coworkers also suffer from similar illnesses. Of the eight original people in my support group, two are dead from cancers: one man had lung and liver cancer, and the second man died from myeloma (bone cancer); neither man had ever smoked and seldom, if ever, consumed alcoholic beverages according to their wives and friends. Another man has leukemia which is presently in remission. Many of my coworkers have developed brain cancers/tumors and stomach cancers. Myopathy, arthritis, liver dysfunctions, lung problems, symptoms of toxic brain syndrome, etc. are also very common health problems among my coworkers and myself. Toxic brain syndrome and heart problems seem to be the most common problems among the workers. Hamilton County also has the highest rate of cancer in Florida due to pollution from phosphoric acid manufacturing.

The doctors at Shands Hospital, Gainesville, FL (specializing in cancer research and treatment) said that the type of lung and liver cancer one man died from were unidentifiable, they had never seen it before.

You might say that I should be contacting my own U.S. Representative and Senator because this is a regional problem, and it is not in your back yard. However, this is not the case. We were exposed to the same chemicals that the USEPA and U.S. Centers for Disease Control and Prevention recommends as

HYDROFLUORIC ACID

Hydrofluoric acid is a highly toxic, highly corrosive, color less, fuming liquid found in many aluminum cleaners.

Hydrofluoric acid acts differently from all other acids. The onset of injury proceeds inconspicuously but with grave effects. Hydrofluoric acid is highly corrosive to the skin and can produce first-degree burns. The pain from burns may be delayed for several hours, during which time the acid will burn deep into the skin. Burns may not become apparent for one to twenty-four hours and may appear as reddened, pasty white, blistered, or charred. Hydrofluoric acid can damage muscles, ligaments, and bone in its progression after skin exposure.

...C...r...h...

HF True Life Story:

According to the *New York Times* (11/13/96), a New York City sanitation worker died after inhaling hydrofluoric acid fumes. A second worker was hospitalized after coming to the aid of the first worker.

Apparently, a plastic container with 70% hydrofluoric acid was disposed improperly/illegally with regular refuse. The container burst, spraying the acid, when it was being compacted in the sanitation truck.

It is possible that homicide charges may be filed against the party responsible for the acid when/if that party is identified.



Updated March 17, 1999 by KAB

University of Wisconsin-Milwaukee
Department of Environmental Health, Safety and Risk Management
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Safety Guidelines - Caustic Soda

Caustic Soda in liquid form has a markedly corrosive action on all body tissue. Even dilute solutions may have a destructive effect on tissue after prolonged contact. Inhalation of dust or concentrated mists can cause damage to the upper respiratory tract, while ingestion of liquid or solid causes severe damage to mucous membranes or other tissue with which contact is made. In addition, considerable heat is generated when liquid Caustic Soda is added to water; boiling and spattering may result. It is important that those who handle Caustic Soda are aware of its highly reactive and corrosive properties and know what precautions to take. It is also important to know what procedures to follow in case of accidental exposure. Suggestions for first-aid measures and several protective practices are given in the following paragraphs.

First-Aid Measures

If for any reason Caustic Soda should come in contact with the eyes, the eyes should be flooded immediately with plenty of clean water. Flushing should continue for at least 15 minutes. While flushing, the eyelids should be held apart to ensure flushing of the entire eye surface. **Seek medical attention immediately.**

If Caustic Soda comes in contact with skin or clothing, flush with plenty of clean water for at least 15 minutes. Remove contaminated clothing and footwear. Affected clothing should be washed before reusing and footwear that cannot be decontaminated should be discarded.

If discomfort is experienced from exposure to Caustic Soda dust, mist or spray, the person should employ respiratory protection or leave the contaminated area and report the event to the medical department.

If overcome due to inhalation of Caustic Soda dust, mist or spray, the person should be removed from the contaminated area to fresh air. If breathing has stopped, artificial respiration should be started. Oxygen may be administered if readily available. **Seek medical attention immediately.**

It is unlikely in an industrial situation that Caustic Soda would be ingested; however, if it should be swallowed, DO NOT induce vomiting. Give large quantities of water, or if available, give several glasses of milk. If vomiting occurs spontaneously, position individual's head to keep airway clear. **Never give anything by mouth to an unconscious person. Seek medical attention immediately.**

The final objective in case of Caustic Soda contact and/or overexposure is to get patient rapidly to a hospital emergency room.

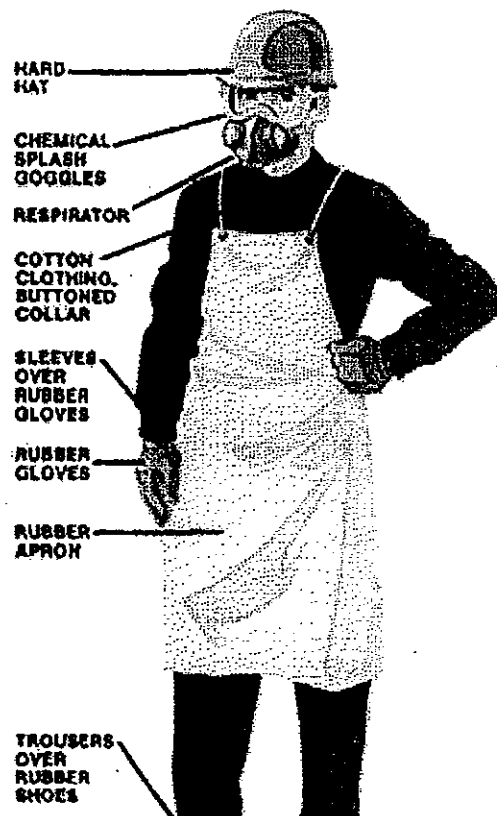
Any Caustic Soda burn may be serious. DO NOT use any kind of neutralizing solution in the eyes. Only clean water should be used.

Both eyewash fountains and safety showers must be provided in all areas where Caustic Soda is used or handled.

Protective Practices

1. Keep equipment clean by washing off any accumulation of Caustic Soda.
2. Pipelines should be welded where practical. Joints should be flanged with gaskets made of caustic-resistant material (such as rubber or Teflon® composite) fitting inside the bolt holes of the flanges. If any screwed fitting is used, apply Teflon® tape to the threads.
3. When disconnecting equipment for repairs, make certain there is no internal pressure on the equipment and that the equipment has been drained and washed.
4. Storage tanks should be provided with suitable overflow pipes to prevent the tanks themselves from overflowing.
5. Shield the packing glands of pumps to prevent spraying of caustic solution in case the packing glands should leak.
6. When releasing air pressure from a pressurized system, every precaution must be taken to avoid spurts or sprays of caustic solution.
7. When making solutions, always add the Caustic Soda slowly to the liquid surface with constant stirring. **Never add the liquid to the Caustic Soda.** Always start with lukewarm liquid (80° - 100°F). Never start with hot or cold liquid.
If Caustic Soda becomes concentrated in one area, or if added too rapidly, or if added to hot or cold liquids, a rapid temperature increase can result in **dangerous** boiling and/or spattering which may cause an immediate violent eruption.
8. Exercise extreme care when breaking solid Caustic Soda into smaller pieces.
9. In case of a spill or leak: Leaks should be shoveled up and removed to chemical waste area or removed by vacuum truck, if liquid. Neutralize residue with dilute acid, preferably acetic acid. Flush spill area with water and follow with liberal covering of sodium bicarbonate.
10. Avoid breathing dust, mist or spray of Caustic Soda.
11. Wear proper protective equipment.

Protective Equipment



11. Wear proper protective equipment.

OSHA requires employers to supply suitable protective equipment for employees. When handling Caustic Soda, it is recommended that the following protective equipment be worn:

RUBBER
WORK SHOES



1. Suitable goggles must be worn for eye protection during the handling of Caustic Soda in any form. The goggles should be close-fitting and equipped with side shields. Goggles which provide adequate ventilation to prevent fogging, without allowing entry of liquids, are preferred.
2. Gloves coated with rubber, synthetic elastomers, PVC, or other plastics should be worn to protect the hands while handling Caustic Soda. Gloves should be long enough to come well above the wrist. Sleeves of cotton jackets or shirts should be buttoned over the glove wrists.
3. Caustic Soda causes leather to disintegrate quite rapidly. For this reason, rubber boots are recommended for footwear. The bottoms of trouser legs should be worn outside the boots. Do **NOT** tuck in.
4. Cotton clothing provides good protection for the body and the use of rubber aprons will provide additional protection.
5. Shirts or jackets should have long sleeves and should be worn with the collar tightly fastened.
6. Hard hats provide some protection for the head, face and neck.
7. NIOSH approved respirators for dusts and mists or protective hoods should be provided for workers who handle flake or granular Caustic Soda.

Caustic Soda Distribution, Handling Safety
Michael Safety Unit # 1015

xanthates

- **Messages sorted by:** [date] [thread] [subject] [author]
- **Next message:** Jose Iribarne: "Re: xanthates"
- **Previous message:** JC WANDEMBERG: "Re: Sustainability...cont."
- **Next in thread:** Jose Iribarne: "Re: xanthates"

Wed, 19 Mar 1997 10:54:40 +0000

EIA (EIA@conama.cl)

My name is Ana Maria Pena, chemical engineer, working at the Environmental Agency of Chile.

We have a problem of discharges of xanthates (probably from cooper mining process) to a small river in the north side of our country (dessert), which produced an environmental impact to the ecosystem of that river. The pollution is almost to arrive to the ocean. We are trying to reduced o neutralized these impacts before in come to the sea.

If you have any information about the stability, toxicity, and the follow up of the degradation, decomposition of this compound. Also we need to take measures to control the effects of the impact.

Thanks in advance,

Ana Maria Pena
Tel : 00 56 2 240 5678
Fax : 00 56 2 244 1262

Environmental Impact Assessment Departament
National Environmental Comission

Obispo Donoso 6
Providencia
Santiago
Chile

Phone: 56-2-2405676
Fax: 56-2-2441262

- **Next message:** Jose Iribarne: "Re: xanthates"
- **Previous message:** JC WANDEMBERG: "Re: Sustainability...cont."
- **Next in thread:** Jose Iribarne: "Re: xanthates"



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

7.19.2

IN CASE OF EMERGENCY / EN CAS D'URGENCE

SARNIA (519) 339-3711

FORT SASKATCHEWAN (403) 998-8282

VARENNES (514) 652-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Dow Quality, Compliance and Safety Department

Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

*Michel
Bourassa*

1. PRODUIT CHIMIQUE ET NOM DE LA COMPAGNIE

EN CAS D'URGENCE :

Fort Saskatchewan, Alberta : (403) 998-8282

Sarnia, Ontario : (519) 339-3711

Varennnes, Québec : (514) 652-1000

PRODUIT : MOUSSANT DOWFROTH® 250

CODE DU PRODUIT : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSF : 002010

Dow Chemical Canada Inc.

C.P. 1012, Sarnia, Ontario N7T 7K7

Pour utilisation au Canada, préparé par le Service de contrôle de qualité, de conformité et de sécurité des produits. Téléphone : (519) 339-5083.

2. COMPOSITION/RENSEIGNEMENTS SUR LES COMPOSANTS

COMPOSANTS

N° CAS

QUANTITÉ (poids/poids en %)

Adduit, méthanol d'oxyde
de propylène

037286-64-9

98 %

3. IDENTIFICATION DES RISQUES

CARACTÉRISTIQUES PRINCIPALES EN CAS D'URGENCE

Liquide de couleur jaune à brun foncé. Odeur légère.
Cause une irritation des yeux.

RISQUES D'EFFETS SUR LA SANTÉ (voir la section 11 - Données sur la toxicité).

YEUX : Risque d'irritation modérée des yeux et de lésion modérée de la cornée.

PEAU : Une exposition prolongée ou répétée ne devrait pas entraîner une irritation importante de la peau. Une exposition unique prolongée ne devrait pas entraîner l'absorption du produit par la peau en quantités nocives. Une exposition prolongée ou répétée à de très grandes quantités d'un ou des composants de ce mélange peut entraîner une narcose (sommolence).

(suite page 2)

* Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE

SARNIA (519) 339-5771

FORT SARRAYGEWON (431) 581-5200

WARRICK (514) 832-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 2

Nom du produit : **MOUSSANT DOWFROT® 250**

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSP : 002010

3. IDENTIFICATION DES RISQUES (SUITE)

INGESTION : Absorption par voie orale d'une dose unique : toxicité considérée comme étant faible. Les petites quantités ingérées à la suite de manipulation normale ne devraient pas causer de lésions; toutefois, l'ingestion de quantités plus grandes pourrait en causer. On a observé, chez les animaux, des tremblements et des convulsions.

INHALATION : Une exposition excessive peut causer une irritation des yeux, des voies respiratoires supérieures et des poumons. Les signes et les symptômes d'une exposition excessive peuvent être des effets anesthésiques ou narcotiques.

EFFETS GÉNÉRAUX ET AUTRES : Les signes et les symptômes d'une exposition excessive peuvent être des effets anesthésiques ou narcotiques. Des expositions excessives répétées peuvent causer des effets sur le foie et, possiblement, sur les reins.

TÉRATOLOGIE (MALFORMATIONS CONGÉNITALES) : Les malformations congénitales causées par les composants (éther monométhylrique de propylène glycol, éther monométhylrique de tripropylène glycol) sont improbables. Les expositions n'ayant aucun effet sur la mère ne devraient pas en avoir non plus sur le fœtus.

4. PREMIERS SOINS

YEUX : Rincer les yeux à l'eau courante immédiatement et sans arrêt pendant 15 minutes. Consulter un médecin.

PEAU : Laver à l'eau courante ou passer sous la douche.

INGESTION : En cas d'ingestion, appeler un médecin. Ne pas faire vomir, sauf sur ordre d'un médecin.

INHALATION : Amener la personne à l'air frais. Si elle ne respire, pratiquer la respiration artificielle. Si elle respire avec difficulté, de l'oxygène doit lui être administré par un personnel qualifié. Appeler un médecin ou amener la personne à l'hôpital.

(suite page 3)

Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE

SAMIA 514 352-3711

FORT SASKATCHEWAN (403) 939-6392

VARENNES 514 352-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Samia, Ontario N7T 7K7 (519) 339-5083

Page : 3

Nom du produit : MOUTRENT DONTROTE* 250

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSP : 002010

4. PREMIÈRE SOINS (SUITE)

NOTES AU MÉDECIN : Pas d'antidote. Soins de soutien. Traitement fondé sur le jugement du médecin et les réactions du patient.

5. MESURES DE LOTTE CONTRE L'INCENDIE

PROPRIÉTÉS D'INFLAMMABILITÉ

POINT D'ÉCLAIR : 149 °C (300 °F).

MÉTHODE UTILISÉE : Setaflash.

TEMPÉRATURE D'AUTOALLUMAGE : Indéterminée.

LIMITES D'INFLAMMABILITÉ

INFÉRIEURE : Indéterminée.

SUPÉRIEURE : Indéterminée.

PRODUITS DE COMBUSTION DANGEREUX : Dans des conditions de feu, les polymères se décomposent. La fumée peut contenir des fragments de polymères de compositions diverses ainsi que des composants toxiques ou irritants, ou les deux, non identifiés. Les produits de combustion dangereux peuvent être, entre autres, de l'oxyde de carbone et du gaz carbonique.

AUTRES RENSEIGNEMENTS SUR L'INFLAMMABILITÉ : L'application directe d'un jet d'eau sur ces liquides chauds peut causer une formation de vapeurs ou une éruption violentes. Le déversement de ces liquides organiques sur des isolants chauds et fibreux peut entraîner une baisse de la température d'autoallumage et, éventuellement, une combustion spontanée.

EXTINCTEURS : Brouillard ou fines gouttelettes d'eau, gaz carbonique, poudre chimique, mousse. Utiliser une mousse antialcool de préférence s'il y en a. Les mousses synthétiques tout usage (y compris celles de type AFFF) ou à base de protéines peuvent convenir mais sont moins efficaces. Ne pas utiliser un jet d'eau direct car il fera se propager l'incendie.

EXTINCTEURS À ÉVITER : Ne pas utiliser un jet d'eau direct.

(suite page 4)

* Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE

TOLSON (111) 5711

PORT SASKATCHEWAN (403) 944-1000

WATKINS (610) 854-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 4

Nom du produit : **MOUSSANT DOWFROTH® 250**

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSF : 002010

5. MESURES DE LUTTE CONTRE L'INCENDIE (SUITE)

DIRECTIVES DE LUTTE CONTRE L'INCENDIE : Tenir les gens éloignés. Isoler la zone d'incendie et en interdire l'accès aux gens dont la présence n'est pas nécessaire. On peut utiliser de l'eau pour déplacer les liquides en feu afin de protéger le personnel et de minimiser les dommages. Les liquides en feu peuvent être éteints en les diluant avec de l'eau. Ne pas utiliser un jet d'eau direct car il pourrait faire se propager l'incendie.

MATÉRIEL DE LUTTE CONTRE L'INCENDIE : Porter un appareil respiratoire autonome à pression positive (ARA) et l'équipement de protection contre les incendies (incluant le casque, le manteau, le pantalon, les bottes et les gants). Si l'équipement de protection n'est pas disponible ou n'est pas utilisé, combattre l'incendie à partir d'un endroit protégé ou assez éloigné.

6. MESURES CONTRE LES DÉVERSEMENTS ACCIDENTELS (Pour la réglementation, consulter la section 15)

PROTECTION DES GENS : Éloigner le personnel non nécessaire.

PROTECTION DE L'ENVIRONNEMENT : Contenir le liquide afin d'éviter la contamination du sol, des eaux de surface et des eaux souterraines.

NETTOYAGE : Récupérer à l'aide d'une matière absorbante non réactive appropriée. Mettre dans des contenants appropriés en vue de l'élimination.

7. MANIPULATION ET ENTREPOSAGE

MANIPULATION : Éviter le contact avec les vapeurs situées dans le haut des contenants.

ENTREPOSAGE : Afin d'éviter des émissions non contrôlées, décharger les vapeurs du contenant au réservoir de stockage.

8. LIMITES D'EXPOSITION/PROTECTION INDIVIDUELLE

SYSTÈMES DE CONTRÔLE : Une bonne ventilation générale devrait être suffisante dans la plupart des conditions. Une ventilation par aspiration à la source pourrait être nécessaire pour certaines opérations.

(suite page 5)

* Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE: 1-800-368-5711 - PORT SASKATCHEWAN 468-998-9382 - VANCOUVER (614) 682-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 5

Nom du produit : MOUSSANT DOWFROTH® 250

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSP : 002010

8. LIMITES D'EXPOSITION/PROTECTION INDIVIDUELLE (SUITE)

ÉQUIPEMENT DE PROTECTION INDIVIDUELLE

PROTECTION DES YEUX ET DU VISAGE : Lunettes antiacide.

PROTECTION DE LA PEAU : En cas de contact prolongé ou fréquent, porter des vêtements de protection imperméables au produit. Le choix d'articles tels qu'écran facial, gants, bottes, tablier ou combinaison sera fait en fonction du genre d'opération.

PROTECTION RESPIRATOIRE : Dans la plupart des conditions, aucune protection respiratoire ne devrait être nécessaire; cependant, en cas de brouillard, porter un masque anti-brouillard approuvé. En cas d'irritation respiratoire, porter un respirateur à adduction d'air filtré approuvé.

NORME(S) D'EXPOSITION : Aucune d'établie.

9. PROPRIÉTÉS PHYSIQUES ET CHIMIQUES

APPARENCE : Liquide de couleur jaune à brun foncé.

ODEUR : Indisponible.

PRESSION DE VAPEUR : <0,01 mmHg à 20 °C.

DENSITÉ DE VAPEUR : Faible.

POINT D'ÉBULLITION : 245 °C (473 °F).

SOLUBILITÉ DANS L'EAU : Entièrement miscible.

POIDS SPÉCIFIQUE : 0,98 à 25/25 °C.

10. STABILITÉ ET RÉACTIVITÉ

STABILITÉ CHIMIQUE : Stable dans les conditions d'entreposage recommandées. Voir la section «Entreposage».

CONDITIONS À ÉVITER : Aucune de connue.

INCOMPATIBILITÉ AVEC D'AUTRES MATIÈRES : Éviter les matières oxydantes.

PRODUITS DE DÉCOMPOSITION DANGEREUX : Aucun de connu.

POLYMÉRISATION DANGEREUSE : Inexistante.

(suite page 6)

* Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE

SARASOTA (813) 938-3711

FORT SARRATON (WYOMING) (307) 338-5282

VALENINNES (514) 339-1004

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 6

Nom du produit : MOUSSANT DOWFROT® 250

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSF : 002010

11. **TOXICOLOGIE** (Pour les risques d'effets sur la santé, consulter la section 3. Pour des données détaillées sur la toxicologie, écrire à The Dow Chemical Company à l'adresse indiquée à la section 1 ou appeler au (519) 339-5083.)

TOXICITÉ CUTANÉE : La DL 50 pour l'absorption cutanée n'a pas été déterminée.

TOXICITÉ ORALE : La DL 50 chez le rat est entre 1260 et 2520 mg/kg.

MUTAGÉNICITÉ : Les résultats d'études in vitro portant sur la mutagénicité des composants testés ont été négatifs.

12. **INFORMATIONS ÉCOLOGIQUES** (Pour plus de précisions, écrire à l'adresse indiquée à la section 1 ou appeler au (519) 339-5083.)

DEVENIR DU PRODUIT DANS L'ENVIRONNEMENT

MOUVEMENT ET RÉPARTITION : Le coefficient de partage octanol/eau (log Pow) est estimé comme étant faible. Données fondées entièrement ou en partie sur l'information sur une matière semblable.

DÉGRADATION ET PERSISTANCE : La demande biochimique en oxygène en 20 jours (DBO20) est de 0,18 p/p. La demande totale en oxygène est de 2,12 p/p. La biodégradation sous des conditions de laboratoire aérobies fixes est faible (DBO20 ou DBO28/demande théorique en oxygène entre 2,5 et 10 %).

ÉCOTOXICITÉ : La CL50 sur une base aiguë pour la tête-de-boule (Pimephales Promelas) est supérieure à 100 mg/L. Ce produit est pratiquement non toxique pour les poissons au point de vue de la toxicité aiguë (CL 50 supérieure à 100 mg/L).

(suite page 7)

* Marque de commerce de The Dow Chemical Company



MATERIAL SAFETY DATA SHEET **BULLETIN DE SÉCURITÉ DU PRODUIT**

IN CASE OF EMERGENCY / EN CAS D'URGENCE: SARINIA (519) 339-5711 - POAT SASKATCHEWAN (416) 596-5782 - VANUWIS (514) 952-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Samia, Ontario N7T 7K7 (519) 339-5063

Page : 7

Nom du produit : **MOUSSANT DOWFROT® 250**

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSP : 002010

13. **ÉLIMINATION** (Pour la réglementation, consulter la section 15.)

MÉTHODE D'ÉLIMINATION : NE PAS JETER DANS LES ÉGOUTS NI SUR LE SOL, NI DANS LES MASSES D'EAU. Les méthodes d'élimination des déchets doivent être conformes aux réglementations fédérales, provinciales (États), et municipales. Les réglementations peuvent varier d'une région à l'autre. Seul celui qui génère ou décide de jeter ou d'éliminer le produit est responsable de la caractérisation des déchets et de la conformité de leur élimination. DOW CHEMICAL N'EST PAS RESPONSABLE DES PRATIQUES DE GESTION OU DE TRANSFORMATION ADOPTÉES PAR LES UTILISATEURS DE CE PRODUIT. LES RENSEIGNEMENTS PRÉSENTÉS DANS CE BULLETIN NE S'APPLIQUENT QUE SUR LE PRODUIT LIVRÉ DANS SA CONDITION NORMALE TEL QU'IL EST DÉCRIT À LA SECTION 2 (Composition/renseignements sur les composants).

PRODUIT INUTILISÉ OU NON CONTAMINÉ : Envoyer de préférence aux endroits accrédités et autorisés suivants : entreprise de recyclage, incinérateur ou toute autre entreprise qui s'occupe de destruction thermique.

Dow met à la disposition de sa clientèle une liste des entreprises de recyclage, de transformation et de gestion des produits chimiques ou plastiques ainsi qu'une liste des entreprises qui remettent les barils à neuf. Pour plus de renseignements, téléphoner au centre d'information pour la clientèle de Dow au 1-800-358-2436 ou au (517) 832-1556.

14. **TRANSPORT**

DEPARTMENT OF TRANSPORTATION (D.O.T.) : Pour obtenir de l'information sur le D.O.T. (Department of Transportation) des États-Unis, consulter la réglementation sur le transport, les documents fournis avec le produit lors de son expédition ou un représentant de Dow.

TRANSPORT DES MARCHANDISES DANGEREUSES (T.M.D.) AU CANADA : Pour obtenir de l'information sur le T.M.D., consulter la réglementation sur le transport, les documents fournis avec le produit lors de son expédition ou un représentant de Dow.

(suite page 8)

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MARK LTD. TATUNG
MATERIAL SAFETY DATA SHEET
BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE: SAMIA (519) 339-5711 - POIT SASKATCHEWAN (403) 499-8292 - WAREHOUSES (514) 652-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 1

Nom du produit : MOUSSANT DOWPROTE[®] 250

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 20 octobre 1996

BSP : 002010

15. **REPRESENTATION** (N'est pas exhaustif - ne comprend qu'une partie.)

AVIS : Les renseignements cités ci-après sont donnés de bonne foi et considérés comme exacts à la date d'entrée en vigueur des présentes; toutefois, aucune garantie implicite ou explicite n'est donnée. Les réglementations peuvent être modifiées et peuvent varier d'une région à l'autre. Il incombe à l'acheteur de s'assurer que ses activités sont conformes aux règlements fédéraux, provinciaux (États) et municipaux. Les renseignements ci-dessous sont fournis conformément aux nombreuses réglementations fédérales, provinciales (États) et municipales. Consulter les autres sections de ce Bulletin de sécurité de produit pour tout renseignement en matière de santé et de sécurité.

RÉGLEMENTATIONS DU CANADA

INFORMATIONS SIMDUT : En vertu du Système d'information canadien sur les matières dangereuses utilisées au travail (S.I.M.D.U.T.), ce produit est classifié comme suit :

D25 - Irritant oculaire et cutané.

Se reporter aux autres sections du bulletin pour des renseignements particuliers sur les mises en garde et la manipulation en toute sécurité de ce produit. Se reporter également au programme de formation au travail offert par l'employeur.

RÈGLEMENT CANADIEN SUR LES PRODUITS CONTRÔLÉS (RPC) : Ce produit est classifié selon les critères de risque du RPC. De plus, le présent bulletin contient tous les renseignements exigés par le RPC.

LOI SUR LES PRODUITS DANGEREUX (LPD) : Les composants (ci-dessous indiqués) contenus dans ce produit sont contrôlés ou figurent sur la liste de divulgation des ingrédients (articles 13 et 14 de la Loi canadienne sur les produits dangereux), ou les deux.

COMPOSANTS

N° CAS

**QUANTITÉ
(% poids/poids)**

Éther méthylique de polypropylène glycol 097266-64-9 98 %

(suite page 9)

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MATERIAL SAFETY DATA SHEET BULLETIN DE SÉCURITÉ DU PRODUIT

IN CASE OF EMERGENCY / EN CAS D'URGENCE

SARNIA 519 339-5111

FORT SASKATCHEWAN 403 682-4242

MONTREAL 514 652-1000

PREPARATION INFORMATION / RENSEIGNEMENTS SUR LA PRÉPARATION:

Prepared for use in Canada by / Pour utilisation au Canada, préparé par:

Product Quality, Compliance and Safety Department

Dow Chemical Canada Inc. P.O. Box 1012, Sarnia, Ontario N7T 7K7 (519) 339-5083

Page : 9

Nom du produit : MOUSSEANT DOWPROTE® 250

Code du produit : 23586

En vigueur le 22 décembre 1995

Imprimé le 28 octobre 1996

BSP : 002010

15. RÉGLEMENTATION (SUITE)

RÉGLEMENTATIONS DES ÉTATS-UNIS

SARA 313 - INFORMATIONS : À notre connaissance, ce produit ne contient aucune substance à signaler conformément à la «Superfund Amendments and Reauthorization Act», article 313 (Title III).

CATÉGORIE DE RISQUES SARA : En vertu des catégories de risques EPA, établies par la loi «Superfund Amendment and Reauthorization Act» de 1986 (SARA Title III), articles 311 et 312, et des définitions applicables, ce produit est classé dans les catégories suivantes :

Risque de toxicité immédiate.

Risque de toxicité à retardement.

TOXIC SUBSTANCES CONTROL ACT (TSCA) :

Tous les composants figurent sur l'inventaire de la TSCA ou il n'est pas obligatoire que les composants figurent sur l'inventaire de la TSCA.

STATE RIGHT-TO-KNOW : Ce produit n'est pas censé contenir des substances assujetties au règlement de divulgation des États du New Jersey et de la Pennsylvanie.

OSHA HAZARD COMMUNICATION STANDARD :

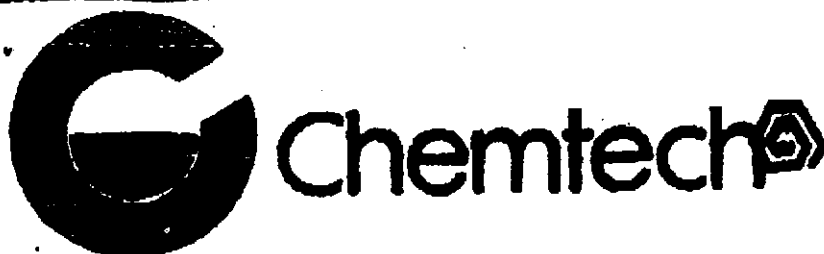
Ce produit est un «produit chimique dangereux» selon la définition de l'OSHA Hazard Communication Standard (règlement 29 CFR partie 1910.1200).

16. AUTRES RENSEIGNEMENTS

BULLETIN : Révisé en 16 sections.

* Marque de commerce de The Dow Chemical Company

Les renseignements précités sont donnés de bonne foi mais ne constituent aucune garantie implicite ou explicite. Pour de plus amples renseignements, communiquer avec Dow Chemical Canada Inc.



PRODUCT DATA
D0584-106w
Represented by
MIN-CHEM CANADA INC.
480 Wyecroft Road
Oakville, Ontario
L6K 2G7
Tel. (905) 842-8000
Fax (905) 842-8005

HYDROFLUOSILICIC ACID

Prix Budget 0.31/kg

CHEMICAL ANALYSIS:

% H_2SiF_6
% Fluosilicic Salts
% Heavy Metals (as Pb)
% HF
pH of 1% H_2SiF_6

Typical Analysis

24.5
None
<0.005
0.3
1.2

Meets ANSI/AWWA Standard B709-89

PHYSICAL PROPERTIES:

Specific Gravity at 60°F
Molecular Weight
Boiling Point of Aqueous 22% Solution
Freezing Point of Aqueous 22% Solution
Freezing Point of Aqueous 25% Solution
Description

1.22
144.08
221°F (approx.)
4°F (approx.)
-4°F

Aqueous solution, water white to straw-yellow, corrosive acid, irritating to skin and having a pungent odor.

CONTAINERS:

Tank trucks, Rubber or Plastic-lined
Tank cars, Rubber or Plastic-lined

Weight

40,000 lb (approx.) *→ 12, H4T on 2*
80,000, 100,000 and 196,000 lb net (approx.)—
varying size rail tank cars

FREIGHT DESCRIPTION:

Hazardous Material Description
Hazardous Material Classification
Freight Classification

Hydrofluorosilicic Acid
Corrosive Material
Hydrofluorosilicic Acid

See reverse for additional information

The data and recommendations provided are based upon information available to us which we believe to be reliable. However, the information herein is provided solely for the convenience of our customers, and we assume no liability for any inaccuracies. All product data and specifications are subject to actual testing and to the terms of our purchase order and business warranties are expressed or implied regarding the results to be obtained from the product or that any use thereof will not interfere with any patent.

CHEMTech INDUSTRIES, INC. Manufactured Products Division 1885 Des Peres Road, P.O. Box 81000, St. Louis, Missouri 63131-1
Area Code 314-896-8900 • In-state Toll Free: 800-382-1188 • Out of state Toll Free: 800-325-3332 • Fax: 314-896-2307

DEC 28 '84 09:00



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Use in Public Water Treating Plants:

The reduction in dental caries by adjusting the fluoride content of public water supplies is a matter of common knowledge today, a decade following the first experimental installation in Newburgh, New York. Approximately sixty million people in over three thousand communities are now drinking fluoride-treated water from water purification plants where fluoridation is currently practiced. Fluoridation is concerned with the controlled introduction to water of the fluoride ion. Other materials in the fluoride compound simultaneously introduced into the water with the fluoride ions are carriers which provide no benefits and are non-toxic. The addition of one part per million of fluoride requires that the product be soluble, of definite concentration and have high purity standards. In conformity with the American Water Works Association standard B703-71, the term fluosilicic acid has replaced the more technical designation of hydrofluosilicic acid. After the original work with sodium fluoride proved the effectiveness of fluoride on tooth health and a broad fluoridation program was envisaged, new sources of fluoride and economics of their use were investigated. Fluosilicic acid is a high purity source of fluoride. It is simpler to use than any other chemical approved for water fluoridation purposes, primarily because it is a liquid and can therefore be accurately measured and fed with a minimum of equipment. In contrast to powdered or granular chemicals, it presents no dust problems, no measuring problems and handling requires a minimum of labor. Today most of the large cities and many small ones are fluoridating with fluosilicic acid. It is readily available in tank cars or tank trucks and can also be supplied in 15 gallon carboys and 55 gallon drums. The addition of fluosilicic acid to a water supply can be readily controlled to give a total fluoride (F) level of one part per million which has been established as effective for reducing tooth decay. It should be used in accordance with procedures approved by each state's department of health.

Acid Characteristics:

Fluosilicic acid is a transparent, straw-colored, corrosive liquid having the chemical formulation of H_2SiF_6 . It is manufactured in modern rubber lined equipment producing an acid of high commercial purity.

Commercial water solutions of the acid are available, having concentrations of between 20% and 25% H_2SiF_6 . Fluosilicic acid is generally believed not to exist in the vapor phase, but only in solution. Upon vaporizing, it decomposes into hydrofluoric acid (HF) and silicon tetrafluoride. This equilibrium exists at the surface of strong solutions of fluosilicic acid and if stored in glass containers, the small concentration of hydrofluoric acid may very slowly attack the glass above the solution level. For this reason, it is generally shipped in polyethylene containers rather than glass carboys. A 22% fluosilicic acid-water solution weighs 10.2 pounds per gallon at 60°F, and has a fluoride (F) content of 17.41%.

Installation:

In a typical large plant installation, rubber-lined vented storage tanks are usually mounted outside the building with the tanks ranging in size from 4,500 to 6,500 gallons capacity. These tanks, equipped with recording level gauges, feed the acid through plastic piping or tubing to the dosage unit. Feeding is regulated by controlled volume pumps. Metering is used for accurate flow records. Fluosilicic acid may be handled in rubber-lined, saran or other available corrosive-resistant equipment as suggested below:

Pipes and lines	—rubber, saran or polyethylene
Pumps	—Lucite, saran or Hastelloy
Valves	—rubber-lined or polyethylene lined
Tanks	—rubber-lined or saran or polyethylene lined

Acid should be pumped by positive diaphragm proportioning pumps.

Operating Procedure:

The drum or drums of fluosilicic acid should be mounted on a platform of sufficient size and capacity to permit weighing the amount used each day. Proportioning pumps deliver an accurate volume, but for small pumping rates, the dosage may be more satisfactorily regulated by periodic weighing of the drum. Whenever a drum of fluosilicic acid is replaced on the scale, the time and weight should be recorded in the daily operating log. Whenever dosage is changed to a varying pumpage, the time and feeder setting should be recorded in the daily log.



Represented by
MIN-CHEM CANADA INC.
450 Wyecroft Road
Oshawa, Ontario
L8K 3G7
Tel. (800) 842-8300
Fax (800) 842-8305

The data and representations presented are based upon information available to us which we believe to be reliable. However, the information herein is provided solely for the convenience of our customers, and we assume no liability for any inaccuracies. All product data and specifications are subject to actual testing and in the terms of our purchase order and invoice, no warranties are expressed or implied regarding the results to be obtained from the product or that any use thereof will not damage or injure any person.

CHEMTECH INDUSTRIES, INC. Manufactured Products Division 1686 Des Peres Road, P.O. Box 31000, St. Louis, Missouri 63131-1000
Area Code 314-865-8800 • In-state Toll Free: 800-382-1165 • Out of state Toll Free: 800-385-3332 • Fax: 314-865-2907

DEC 20 '94 09:00

428966 PAGE.001
TOTAL 8065 382 **
TOTAL 0.00



HF

Mario Courchesne
Code UWR
28444 baryl 217.73 Kg
#1.40/FAB MTL

7.14.3

Hydrofluoric Acid, Aqueous

Characteristics:

Aqueous hydrofluoric acid is a clear, colorless, corrosive liquid with a unique ability to dissolve glass and siliceous materials.

Properties:

Formula	HF
Molecular weight	20.01
Specific gravity (70% HF at 32°F)	1.258
Freezing point, °F (70% HF)	-96.8

Method of Manufacture:

Aqueous hydrofluoric acid is made by absorbing in water anhydrous hydrofluoric acid produced by the action of sulfuric acid on fluorospar.

Typical Analysis:

% Hydrofluoric acid (HF)	70.3
% Sulfur dioxide (SO ₂)	0.07
% Non-volatile acidity	0.1
% Iron (Fe)	0.02

Freezing point: (approximate)

% HF	Freezing Points
30	-96°F
48	-36°F
52	-32°F
60	-42°F
70	-96°F
80	-150°F

Specific gravity - 32°F

% HF	Sp. Gr.
30	1.119
48	1.180
52	1.208
60	1.235
70	1.258
80	1.258

Packages and Shipping Containers:

Package	Net Wt.
Steel drums with polyethylene liners	260 lb
Tank truck	19 tons

Shipping Regulations:

C.T.C. "Corrosive Material"
"Corrosive" Label
Placard "Dangerous"

Product Market and Uses:

Market	Use	Reason for use
Alloy steel manufacturers	Pickling	Removes scale
Chemical manufacturers	Production of fluorine compounds	Source of fluoride ion
Foundries	Cleaning iron and steel castings	Dissolves sand
Glassmakers	Polishing, etching and frosting glass	Dissolves glass
Metal finishers	Electropolishing metals	Provides a viscous layer that permits dissolving metal surface without pitting
Mines	Froth flotation of ores	Depressant
Sand producers	Washing sand free of iron	Dissolves silica to loosen surface iron stains

All measurements, information, and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, express or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations as to infringing any patent. The user should not assume that all safety measures are indicated, or that other measures may not be required.

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LCI LTD

Product Specification Sheet

Hydrofluoric Acid 70 %

Chemical Analysis:

	Guaranteed	Typical
Assay (HF)	70.00 % min	70.500 %
SO ₂	0.01 % max	0.003 %
Non-Volatile Acid (as H ₂ SO ₄)	0.01 % max	0.005 %
H ₂ SiF ₆	0.01 % max	0.005 %
Fe	50 ppm max	10 ppm

Physical Properties:

Description	Colorless to slightly tinted, fuming, highly corrosive liquid.
Specific Gravity (H ₂ O=1)	1.258
Boiling Point	150.8° F
Density of Liquid	78.51 lbs/Ft ³
Molecular Weight	20.01

Containers:

Bulk Rail Cars	50 - 100 tons net weight (approximate)
Bulk Tank Trucks	20 - 25 tons net weight (approximate)
Steel/Polyethylene lined NR drums	500 lbs net weight

Freight Description:

DOT Classification	Corrosive
DOT Shipping Name	Hydrofluoric Acid, Solution
UN Number	UN 1790

The information presented herein is based on data considered to be accurate and that reflects the requirements of the OSHA Hazard Communication Standards in effect as of the date of preparation of this Product Specification Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices or from any hazards inherent in the nature of the product.

10/91

P1262

MATERIAL SAFETY DATA SHEET

PAGE 1

VAN WATERS & ROGERS LTD. 9800 VAN HORNE WAY RICHMOND, B.C. V6X 1W5
 SALES ORDER:
 VAN WATERS & ROGERS PRODUCT: 31142
 MSDS NUMBER: P1262 VERSION: 3
 DATE PRINTED: 31/01/95

EGOFF

WHMIS CODES:

D.1A B

-----EMERGENCY ASSISTANCE-----

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL CHEMTREC
 (800) 424-9300.

-----FOR PRODUCT AND SALES INFORMATION-----

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE

-----PRODUCT IDENTIFICATION-----

PRODUCT NAME: HYDROFLUORIC ACID
 COMMON NAMES/SYNONYMS: HYDROFLUORIC
 ACID SOLUTION; AQUEOUS HF

CAS NO.: 7664-39-3
 VWER CODE: P1262

FORMULA: H F
 HAZARD RATING (NFPA 49)
 HEALTH: 4
 FIRE: 0
 REACTIVITY: 0
 SPECIAL: NONE

DATE ISSUED: 01/93
 SUPERCEDES: 01/90
 HAZARD RATING SCALE:
 0-MINIMAL 3-SERIOUS
 1-SLIGHT 4-SEVERE
 2-MODERATE

-----HAZARDOUS INGREDIENTS-----

COMPONENT	CAS NO.	%	EXPOSURE LIMITS, PPM			HAZARD
			OSHA PEL	ACGIH TLV	OTHER LIMIT	
HYDROGEN FLUORIDE	7664-39-3	30-70	3	3	NONE	CORROSIVE
WATER	7732-18-5	BALANCE	NONE	NONE	NONE	NONE

-----PHYSICAL PROPERTIES-----

BOILING POINT, DEG F: A = 230; VAPOR PRESSURE, MM HG/20 DEG C:
 B = 227; C = 152
 FREEZING POINT, DEG F: A = -94; VAPOR DENSITY (AIR=1): 1.26
 B = -36; C = -94
 SPECIFIC GRAVITY (WATER=1): A = 1.12; WATER SOLUBILITY, %: 100
 B = 1.19; C = 1.26
 APPEARANCE AND ODOR: COLOR- EVAPORATION RATE (BUTYL ACETATE=1): NOT
 LESS LIQUID, FUMES AT CONCENTRATIONS ABOVE 48%; PUNGENT, IRRITATING ODOR
 APPLICABLE

WHERE A = 30% HYDROFLUORIC ACID;
 B = 48% HYDROFLUORIC ACID;
 C = 70% HYDROFLUORIC ACID.

-----FIRST AID MEASURES-----

IF INHALED: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT
 BREATHING. GET IMMEDIATE MEDICAL ATTENTION.

IN CASE OF EYE CONTACT: IMMEDIATELY FLUSH EYES WITH LOTS OF RUNNING

P1262

MATERIAL SAFETY DATA SHEET

PAGE 2

WATER FOR 30 MINUTES. LIFTING THE UPPER AND LOWER EYELIDS OCCASIONALLY. GET IMMEDIATE MEDICAL ATTENTION. UNTIL MEDICAL HELP ARRIVES, APPLY 1 OR 2 DROPS OF 0.5% PONTOCAINE HYDROCHLORIDE FOLLOWED BY A SECOND IRRIGATION FOR 15 MINUTES. DO NOT USE OILS OR OILY OINTMENTS UNLESS DIRECTED BY A PHYSICIAN. (PONTOCAINE HYDROCHLORIDE IS A TRADENAME OF WINTHROP LABORATORIES FOR TETRACAINE HYDROCHLORIDE.)

IN CASE OF SKIN CONTACT: IMMEDIATELY FLUSH WITH COLD WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. PAYING PARTICULAR ATTENTION TO THE SKIN UNDER THE NAILS. THEN IMMERSE AND SOAK CONTAMINATED AREA IN 0.13% ICED AQUEOUS ZEPHIRAN CHLORIDE SOLUTION FOR 30-60 MINUTES. USE SATURATED COMPRESSES IF AREA CANNOT BE IMMERSED. CHANGE COMPRESSES EVERY 2 MINUTES. ALWAYS GET IMMEDIATE MEDICAL ATTENTION NO MATTER HOW MINOR BURNS MAY APPEAR. WASH CONTAMINATED CLOTHING BEFORE REUSE BUT DESTROY CONTAMINATED SHOES. (ZEPHIRAN CHLORIDE IS A TRADENAME OF WINTHROP LABORATORIES FOR BENZALKONIUM CHLORIDE.)

IF SWALLOWED: DO NOT INDUCE VOMITING. IF CONSCIOUS, GIVE LOTS OF WATER OR MILK. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

NOTE TO PHYSICIAN: THE MEDICAL TREATMENT PROCEDURES FOR HF BURN TREATMENT AS OBTAINED BELOW HAVE BEEN APPROVED BY PHYSICIANS FOR HF PRODUCTION FACILITIES

1. SKIN BURNS. BEFORE PROCEEDING WITH THE MEDICAL TREATMENT OUTLINED BELOW, IT IS SUGGESTED THAT THE ZEPHIRAN CHLORIDE TREATMENT UNDER THE ABOVE FIRST AID PROCEDURE BE REPEATED. IT HAS BEEN FOUND IN MOST CASES THAT CONTINUED FIRST AID TREATMENT WILL OBLVIATE THE CALCIUM GLUCONATE INJECTIONS OUTLINED BELOW. TREATMENT CONSISTS OF INJECTION IN THE BURNED AREA WITH 10% CALCIUM GLUCONATE SOLUTION (STANDARD AMPOULE OF 10% INTRAVENOUS SOLUTION) THE CALCIUM GLUCONATE SOLUTION SHOULD BE INJECTED BY A PHYSICIAN BY INFILTRATING THE SKIN AND SUBCUTANEOUS TISSUE IN THE SAME MANNER AS USED IN THE INJECTION OF A LOCAL ANESTHETIC. ALL THE SKIN WHICH HAS BEEN EXPOSED TO THE ACID SHOULD BE INFILTRATED, INCLUDING AT LEAST 1/4 TO 1/2 INCH AROUND THE AREA. EXTREME CAUTION SHOULD BE USED WHEN INJECTING CALCIUM GLUCONATE INTO FINGERS - IT COULD PRODUCE SUFFICIENT PRESSURE TO ENDANGER CIRCULATION AND CONTRIBUTE TISSUE NECROSIS. APPLY CALCIUM GLUCONATE DRESSING CREAM TO AFFECTED AREA BEFORE APPLYING DRESSING. USE DRESSING THAT WILL NOT SOAK UP CREAM.

2. EYE BURNS. EYE EXPOSURE SHOULD BE FOLLOWED IMMEDIATELY BY PROLONGED GENTLY IRRIGATING WITH COPIOUS AMOUNTS OF COOL TAP WATER. FURTHER TREATMENT TO THE EYE CONSISTS OF ANESTHETIZING WITH DROPS OF PONTOCAINE SOLUTION, 0.5%. THEN IRRIGATE WITH DISTILLED WATER. PERSISTENT PAIN USUALLY INDICATES A NEED FOR ADDITIONAL GENTLE IRRIGATION. FLUORESCIN SHOULD BE INSTALLED IN THE EYE AND IF STAINING OCCURS, INTERMITTENT IRRIGATION SHOULD BE PROMPTLY SOUGHT BUT IRRIGATION MUST NOT BE DELAYED.

3. FINGER NAILS. FINGER NAILS AFFECTED SHOULD BE CUT BACK OR SPLIT AND IT MAY BE NECESSARY TO DRILL THE NAILS OR REMOVE FOR DRAINAGE. WASH AND SOAK IN ZEPHIRAN CHLORIDE SOLUTION AS DIRECTED UNDER FIRST AID. IT MAY BE NECESSARY TO INJECT UNDER THE NAIL WITH 10% CALCIUM GLUCONATE SOLUTION. DRESS WITH THE 10% CALCIUM GLUCONATE CREAM.

4. INGESTION. LAVAGE WITH LIME WATER SHOULD BE DONE PROMPTLY BY A PHYSICIAN ONLY. SOLUBLE CALCIUM INACTIVATES THE FLUORIDE ION. IN ADDITION TO LAVAGE, 10 CC OF A 10% SOLUTION OF CALCIUM GLUCONATE SHOULD BE INJECTED INTRAVENOUSLY. RESPIRATORY DEPRESSION SHOULD BE COMBATED WITH OXYGEN AND STIMULANTS IF NECESSARY; AND ARTIFICIAL RESPIRATION SHOULD BE USED IF NEEDED.

-----HEALTH HAZARD INFORMATION-----

PRIMARY ROUTES OF EXPOSURE: SKIN OR EYE CONTACT, INHALATION.

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: VAPORS AND MISTS ARE EXTREMELY CORROSIVE TO THE NOSE, THROAT AND MUCOUS MEMBRANES. BRONCHITIS, PULMONARY EDEMA, AND CHEMICAL PNEUMONIA MAY OCCUR. IRRITATION, COUGHING, CHEST PAIN, AND DIFFICULTY IN BREATHING MAY OCCUR WITH BRIEF EXPOSURE WHILE PROLONGED EXPOSURE MAY RESULT IN MORE SEVERE IRRITATION AND TISSUE DAMAGE. BREATHING HIGH CONCENTRATIONS MAY RESULT IN DEATH.

EYE CONTACT: VAPORS, LIQUID, AND MISTS ARE EXTREMELY CORROSIVE TO THE EYES. BRIEF CONTACT OF THE VAPORS WILL BE SEVERELY IRRITATING. BRIEF

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CONTACT OF THE LIQUID OR MISTS WILL SEVERELY DAMAGE THE EYES AND PROLONGED CONTACT MAY CAUSE PERMANENT EYE INJURY WHICH MAY BE FOLLOWED BY BLINDNESS.

SKIN CONTACT: VAPORS, MISTS, AND LIQUID ARE EXTREMELY CORROSIVE TO THE SKIN. VAPORS WILL SEVERELY IRRITATE THE SKIN AND LIQUID AND MISTS WILL SEVERELY BURN THE SKIN. PROLONGED LIQUID CONTACT WILL BURN OR DESTROY SURROUNDING TISSUE AND DEATH MAY ACCOMPANY BURNS WHICH EXTEND OVER LARGE PORTIONS OF THE BODY. SOLUTIONS AS DILUTE AS 2% OR LESS MAY CAUSE BURNS.

SWALLOWED: VAPORS, MISTS, AND LIQUID ARE EXTREMELY CORROSIVE TO THE MOUTH AND THROAT. SWALLOWING THE LIQUID BURNS THE TISSUES, CAUSES SEVERE ABDOMINAL PAIN, NAUSEA, VOMITING, AND COLLAPSE. SWALLOWING LARGE QUANTITIES CAN CAUSE DEATH.

CHRONIC EFFECTS OF EXPOSURE: DILUTE SOLUTIONS MAY NOT BE PAINFUL OR SHOW VISIBLE EFFECTS UNTIL HOURS AFTER SKIN EXPOSURE, DURING WHICH TIME THE ACID HAS PENETRATED THE SKIN CAUSING POSSIBLE DESTRUCTION OF TISSUE AND DEVELOPMENT OF SKIN ULCERS. THIS ACID IS EXTREMELY IRRITATING AND READILY PENETRATES THE SKIN TO ATTACK UNDERLYING TISSUE AND BONE AND ITS BURNS ARE SLOW TO HEAL. ANY FORM OF EXPOSURE MAY CAUSE SECONDARY HYPOCALCEMIA; IF TREATMENT IS DELAYED DEATH MAY RESULT. MAY ALSO PRODUCE GANGRENE OR CAUSE FLUOROSIS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: NONE KNOWN.

-----TOXICITY DATA-----

ORAL: NO DATA FOUND

DERMAL: NO DATA FOUND

INHALATION: FOR HF: HUMAN LCLO = 50 PPM/30 MIN; MAN TCLO = 110 PPM/1 MIN; RAT LC50 = 1,276 PPM/1 HR

CARCINOGENICITY: THIS MATERIAL IS NOT CONSIDERED TO BE A CARCINOGEN BY THE NATIONAL TOXICOLOGY PROGRAM, THE INTERNATIONAL AGENCY FOR RESEARCH ON CANCER, OR THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION.

OTHER DATA: NONE

-----PERSONAL PROTECTION-----

VENTILATION: LOCAL MECHANICAL EXHAUST VENTILATION CAPABLE OF MAINTAINING EMISSIONS AT THE POINT OF USE BELOW THE PEL.

RESPIRATORY PROTECTION: IF USE CONDITIONS GENERATE VAPORS OR MISTS, WEAR A NIOSH-APPROVED RESPIRATOR APPROPRIATE FOR THOSE EMISSION LEVELS. APPROPRIATE RESPIRATORS MAY BE A FULL FACEPIECE AIR-PURIFYING CARTRIDGE RESPIRATOR EQUIPPED FOR ACID GASES/MISTS, A SELF-CONTAINED BREATHING APPARATUS IN THE PRESSURE DEMAND MODE, OR A SUPPLIED-AIR RESPIRATOR.

EYE PROTECTION: CHEMICAL GOGGLES AND FULL FACESHIELD UNLESS A FULL FACEPIECE RESPIRATOR IS ALSO WORN. IT IS GENERALLY RECOGNIZED THAT CONTACT LENSES SHOULD NOT BE WORN WHEN WORKING WITH CHEMICALS BECAUSE CONTACT LENSES MAY CONTRIBUTE TO THE SEVERITY OF AN EYE INJURY.

PROTECTIVE CLOTHING: ACID-RESISTANT SLICKER SUIT WITH RUBBER APRON, RUBBER BOOTS WITH PANTS OUTSIDE, AND RUBBER GLOVES WITH GAUNTLETS.

OTHER PROTECTIVE MEASURES: AN EYEWASH AND SAFETY SHOWER SHOULD BE NEARBY AND READY FOR USE.

-----FIRE AND EXPLOSION INFORMATION-----

FLASH POINT, DEG F: NONE
METHOD USED: NOT APPLICABLE

FLAMMABLE LIMITS IN AIR: *
LOWER: NOT APPLICABLE
UPPER: NOT APPLICABLE

EXTINGUISHING MEDIA: THIS MATERIAL IS NOT COMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

SPECIAL FIRE FIGHTING PROCEDURES: FIRE FIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. USE WATER

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SPRAY TO COOL NEARBY CONTAINERS AND STRUCTURES EXPOSED TO FIRE.

UNUSUAL FIRE AND EXPLOSION HAZARDS: EXTINGUISH ALL NEARBY SOURCES OF IGNITION SINCE FLAMMABLE HYDROGEN GAS WILL BE LIBERATED FROM CONTACT WITH SOME METALS.

-----HAZARDOUS REACTIVITY-----

STABILITY: STABLE
CONDITIONS TO AVOID: EXCESSIVE HEAT AND CONTAMINATION OF ANY KIND.

POLYMERIZATION: WILL NOT OCCUR
MATERIALS TO AVOID: ALKALIS, OXIDIZING OR REDUCING MATERIALS, CYANIDES, SULFIDES, OR COMBUSTIBLE MATERIALS. ALSO AVOID GLASS, CONCRETE, METALS, ORGANICS SUCH AS CLOTH OR LEATHER, WATER, AND ACIDS.

HAZARDOUS DECOMPOSITION PRODUCTS: MAY LIBERATE HF.

-----SPILL, LEAK, AND DISPOSAL PROCEDURES-----

ACTION TO TAKE FOR SPILLS OR LEAKS: WEAR HOODED ACID-RESISTANT SLICKER SUIT AND COMPLETE PROTECTIVE EQUIPMENT INCLUDING RUBBER GLOVES, RUBBER BOOTS, AND A SELF-CONTAINED BREATHING APPARATUS IN THE PRESSURE DEMAND MODE OR A SUPPLIED-AIR RESPIRATOR. NO SKIN AREA MUST BE EXPOSED TO FUMES. IF THE SPILL OR LEAK IS SMALL, A FULL FACEPIECE AIR-PURIFYING CARTRIDGE RESPIRATOR EQUIPPED FOR ACID GASES MAY BE SATISFACTORY. IN ANY EVENT, ALWAYS WEAR EYE PROTECTION. FOR SMALL SPILLS OR DRIPS, MOP OR WIPE UP AND DISPOSE OF IN DOT-APPROVED WASTE CONTAINERS. FOR LARGE SPILLS, CONTAIN BY DIKING WITH SOIL OR OTHER NON-COMBUSTIBLE ABSORBENT MATERIAL AND CAREFULLY NEUTRALIZE WITH SODA ASH OR LIME. IF SODA ASH IS USED, PROVIDE ADEQUATE VENTILATION TO DISSIPATE THE CARBON DIOXIDE GAS. KEEP NON-NEUTRALIZED MATERIAL OUT OF SEWERS, STORM DRAINS, SURFACE WATERS, AND SOIL. COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS ON SPILL REPORTING, AND HANDLING AND DISPOSAL OF WASTE.

DISPOSAL METHODS: DISPOSE OF CONTAMINATED PRODUCT AND MATERIALS USED IN CLEANING UP SPILLS OR LEAKS IN A MANNER APPROVED FOR THIS MATERIAL. CONSULT APPROPRIATE FEDERAL, STATE AND LOCAL REGULATORY AGENCIES TO ASCERTAIN PROPER DISPOSAL PROCEDURES.
NOTE: EMPTY CONTAINERS CAN HAVE RESIDUES, GASES AND MISTS AND ARE SUBJECT TO PROPER WASTE DISPOSAL, AS ABOVE.

-----SPECIAL PRECAUTIONS-----

STORAGE AND HANDLING PRECAUTIONS: STORE IN A COOL, DRY, WELL-VENTILATED PLACE. STORE AWAY FROM ALL OTHER CHEMICALS AND POTENTIAL SOURCES OF CONTAMINATION. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. DO NOT USE PRESSURE TO EMPTY CONTAINER. WASH THOROUGHLY AFTER HANDLING. DO NOT GET IN EYES, ON SKIN, OR ON CLOTHING.

REPAIR AND MAINTENANCE PRECAUTIONS: DO NOT CUT, GRIND, WELD, OR DRILL ON OR NEAR THIS CONTAINER.

OTHER PRECAUTIONS: CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, WILL RETAIN PRODUCT RESIDUE AND VAPORS. ALWAYS OBEY HAZARD WARNINGS AND HANDLE EMPTY CONTAINERS AS IF THEY WERE FULL. PROHIBIT SMOKING, FLAMES, AND SPARKS NEAR HF STORAGE OR USE AREAS.

OTHER PRECAUTIONS: ADDITION OF WATER RELEASES HEAT WHICH CAN RESULT IN VIOLENT BOILING AND SPLATTERING. ALWAYS ADD SLOWLY AND IN SMALL AMOUNTS. NEVER USE HOT WATER. ALWAYS ADD ACID TO WATER, NEVER WATER TO ACID.

-----PREPARATION INFORMATION-----

CONTACT MSDS CO-ORDINATOR, VAN WATERS & ROGERS LTD.
DURING BUSINESS HOURS, PACIFIC TIME (604)-273-1441.

-----NOTICE-----

VAN WATERS & ROGERS LTD. EXPRESSLY DISCLAIMS ALL EXPRESSED OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE PRODUCT PROVIDED.

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-----REVISION-----

01/90: REVISED SPILL AND LEAK PROCEDURES.

01/93: REVIEWED IN ACCORDANCE WITH WHMIS REGULATIONS.
NO CHANGE OF INFORMATION.

===== END OF MSDS =====

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ARMAK 1025

MSDS NO. 15-159903

A. Mario Courchesne

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

PRODUCT NAME
 ARMAK 1025

SYNONYM
 Proprietary

CAS #
 PROPRIETARY

MANUFACTURERS NAME
 Akzo Nobel Chemicals Inc.

ADDRESS
 300 South Riverside Plaza
 Chicago, IL 60606

COUNTRY
 USA

PRODUCT USE
 Surfactant

ISSUE DATE
 2/14/1996

can Di:

Genard Delisle, ing., M.Sc. A.
 Chargé de projets
 2700, rue Einstein, Sainte-Foy (Québec)
 Canada G1P 3W8
 Tél.: (418) 643-4340, poste 249
 Téléc.: (418) 646-8106
 E-mail: gdelisle@nq.qc.ca
 http://www.crm.gouv.qc.ca/

ISO 9001
 CENTRE DE RECHERCHE
 MINÉRALE



CHEMICAL NAME
 Proprietary

CHEMICAL FORMULA
 Proprietary

CHEMICAL FAMILY
 Amine compound

PRODUCT/TECHNICAL INFORMATION
 1-800-906-9977

MEDICAL/HANDLING EMERGENCY
 1-914-693-6946

TRANSPORTATION EMERGENCY
 CHEMTREC 1-800-424-9300

REVISION DATE

REVISION NO.
 000

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE DESCRIPTION	PERCENT	CAS#
Proprietary fatty amine acetates	85.000- 94.000	PROPRIETARY
Proprietary fatty polyamine compounds	0.001- 2.000	PROPRIETARY
Organic acid	0.001- 2.000	PROPRIETARY
Proprietary fatty amine acetates	5.000- 15.000	PROPRIETARY

SECTION 3. HAZARDS IDENTIFICATION

Appearance & Odor

Brown solid with a slight acetic acid odor

STATEMENT OF HAZARDS

DANGER!

CAUSES SKIN AND EYE BURNS.

Fire & Explosion Hazards

This product is not defined as flammable or combustible. However, under fire conditions it may support combustion and decompose to give off toxic gases such as carbon monoxide, carbon dioxide, and nitrogen oxides. This product is not sensitive to static discharge.

Primary Route of Exposure

Skin and eye contact are the primary routes of exposure to this product.

Inhalation Acute Exposure

Due to it's low vapor pressure, this product is not likely to present an inhalation hazard at normal temperatures. At elevated temperatures, vapors may cause irritation of the respiratory tract.

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SECTION 3. HAZARDS IDENTIFICATION
(CONTINUED)

Skin Contact - ACUTE

Skin contact can cause severe irritation or burns with redness, swelling, and blistering.

Eye contact - ACUTE

Eye contact can cause severe irritation or burns. May cause permanent eye damage if not flushed out immediately.

Ingestion - ACUTE

Ingestion of this material can cause severe irritation or burns of the mouth, throat, esophagus, and stomach.

CARCINOGENICITY

IARC	NO	OSHA	NO
NTP	NO	ACGIH	NO

SECTION 4. FIRST AID MEASURES

Inhalation First Aid

Inhalation is unlikely; however, if it does occur, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, administer oxygen. Get medical attention.

Skin Contact - First Aid

Immediately remove contaminated clothing and shoes. Flush material from skin with water, and then wash skin thoroughly with soap and plenty of water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get medical attention. Wash contaminated clothing before reuse. Thoroughly clean contaminated shoes before reuse or discard if necessary.

Eye Contact - First Aid

Immediate first aid is required to prevent eye damage. If victim is wearing contact lenses, remove them. Take care not to contaminate the victim's healthy skin and eye. Immediately flush the eye(s) with large quantities of running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. DO NOT let the victim rub the eyes. Do not attempt to neutralize with chemical agents. Obtain medical attention immediately. Oils and ointments should not be used at this time. Continue flushing with water or normal saline solution, if available, for an additional 15 minutes if a physician is not immediately available.

Ingestion - First Aid

DO NOT induce vomiting. If victim is conscious and alert, give plenty of water to drink. Call a physician or a poison control center immediately. If vomiting occurs, keep head below hips to reduce risk of aspiration. Give victim water again. Never give anything by mouth to a person who is unconscious or convulsing. Get medical attention immediately.

Medical conditions aggravated

There are no data available that address medical conditions that are generally recognized as being aggravated by exposure to this product.

Note to Physician

Attending physician should treat exposed patients symptomatically. Chemical burns on the skin should be treated as thermal burns. Skin reactions may take 24-48 hours to develop. Flush eyes with buffered or plain irrigating solutions. If any ulceration or conjunctival injury is present, have an ophthalmologist examine the

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SECTION 4. FIRST AID MEASURES
(CONTINUED)

patient. Iced water helps relieve pain and swelling of both the skin and eyes.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT
300.20 F 149.00 C
Greater than**FLASH METHOD**
Pensky-Martens Closed Cup**AUTO IGNITION TEMPERATURE**
N/D F N/D C**UPPER EXPLOSION LIMIT**
N/D**LOWER EXPLOSION LIMIT**
N/D**Extinguishing Media**

Use water spray, dry chemical, carbon dioxide, or foam extinguishing agents. Direct application of high pressure water streams may scatter burning material.

Fire Fighting Procedures

As in any fire, prevent human exposure to fire, smoke, fumes, or products of combustion. Evacuate non-essential personnel from the fire area. Firefighters should wear positive pressure/pressure demand, self-contained breathing apparatus and impervious protective clothing. If possible remove containers from the fire area. Keep fire exposed containers cool with a water fog or spray to prevent rupture due to excessive heat. High pressure water may spread product from broken containers increasing contamination or fire hazard. Dike fire water for later disposal. Do not allow contaminated water to enter waterways.

Fire & Explosion Hazards

This product is not defined as flammable or combustible. However, under fire conditions it may support combustion and decompose to give off toxic gases such as carbon monoxide, carbon dioxide, and nitrogen oxides. This product is not sensitive to static discharge.

Other Fire + Explosion Hazards

No other explosion hazards of this product are known.

Hazardous Products/Combustion

Oxides of carbon and nitrogen are produced by the combustion of this product.

NFPA HEALTH RATING
3**NFPA FLAMMABILITY RATING**
1**NFPA REACTIVITY RATING**
0**NFPA OTHER**
ND

SECTION 6. ACCIDENTAL RELEASE MEASURES

Cleanup

Isolate spill area and restrict non-essential personnel from area. All personnel involved in spill clean-up should follow good industrial hygiene practices. Wear protective clothing to prevent skin and eye contact. Stop source of spill if this is possible without being injured. Sweep or scoop up spilled material. If liquified, absorb with inert material (e.g., sand or earth). Remove and place in a chemical waste container for disposal. Flush spill area with detergent and water.

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SECTION 7. HANDLING AND STORAGE

Handling

Wear protective equipment when handling this product to prevent eye and skin contact.

Use approved equipment for transport of containers to avoid puncturing or rupturing containers. Do not use air pressure to empty containers.

Emptied container may retain product residues. Follow all warnings and precautions even after container is emptied.

Storage

Store away from foodstuffs or animal feed. Containers should be stored in a cool, dry, well-ventilated area away from strong acidic, basic, and oxidizing materials. Containers which have been opened should be tightly closed when returned to storage. If outdoor storage is unavoidable, containers should be placed in an area shielded from the sun and other elements. Exercise due caution to prevent damage to or leakage from the container.

MAXIMUM STORAGE TEMPERATURE

85.00 F 29.44 C
Ambient

General Comments

Keep containers tightly closed until ready for use.
Wash thoroughly after handling.
Do not reuse containers.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory protection

Use of respiratory protection generally is not required. However, if use conditions (e.g., elevated temperatures) generate vapors, aerosols, or fumes, use a NIOSH-approved organic vapor respirator with dust, mist, and fume filters to reduce potential for inhalation exposure. Where exposure potential necessitates a higher level of protection, use a NIOSH-approved, positive-pressure, pressure-demand, air-supplied respirator.

When using respirator cartridges or canisters, they must be changed frequently (following each use or at the end of the workshift) to assure breakthrough exposure does not occur.

Skin Protection

It is essential that skin contact with this product be prevented through the use of impervious clothing, gloves, and footwear selected with regard for use condition exposure potential.

Protective equipment made of neoprene or nitrile rubber is recommended.

Eye Protection

Eye contact with this product may cause severe irritation or chemical burns of the eyes, and possibly permanent eye damage. Chemical goggles and/or a face shield must be worn when handling this product.

Ventilation protection

Special ventilation is usually not required under normal use conditions. General plant ventilation should be adequate in most cases.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
(CONTINUED)

Other Protection

Safety showers, with quick opening valves which stay open, and eye wash fountains, or other means of washing the eyes with a gentle flow of cool to tepid tap water, should be readily available in all areas where this material is handled or stored. Water should be supplied through insulated and heat-traced lines to prevent freeze-ups in cold weather.

APPLICABLE EXPOSURE LIMITS

Other than any exposure limits which may be displayed in Section 8, there are no other known exposure limits applicable to this product.

EXPOSURE LIMITS/REGULATORY INFORMATION
(IN MG/M3)

SUBSTANCE DESCRIPTION	REG. AGCY	PEL	TLV	TWA	STEL	CEIL
Proprietary fatty amine acetates	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Proprietary fatty polyamine compounds	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Organic acid	OSHA	25.0000	N/D	N/D	N/D	N/D
	ACGIH	N/D	25.0000	N/D	37.0000	N/D
	NIOSH	N/D	N/D	25.0000	37.0000	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D
Proprietary fatty amine acetates	OSHA	N/D	N/D	N/D	N/D	N/D
	ACGIH	N/D	N/D	N/D	N/D	N/D
	NIOSH	N/D	N/D	N/D	N/D	N/D
	SUPPLIER	N/D	N/D	N/D	N/D	N/D

LEGEND:**EXPOSURE LIMIT DESCRIPTIONS**

CEIL Ceiling Exposure Limit
 PEL Permissible Exposure Limit
 STEL Short Term Exposure Limit
 TLV Threshold Limit Value
 TWA Time Weighted Average
 N/D = Not Determined

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE (mm Hg)
LT .1 @ 20 C

VAPOR DENSITY (Air = 1.0)
N/D

EVAPORATION RATE
LT 1 Butylacetate = 1

VOLATILE %
AP 1 % by weight

BOILING POINT
N/D F N/D C
Decomposes above 100 C.

ODOR THRESHOLD (ppm)
N/D

SPECIFIC GRAVITY
EQ 0.892 @ 90 C

BULK DENSITY
N/D

SOLUBILITY IN WATER
AP 5 % by weight @ 20 C

SOLUBILITY IN OTHER SOLVENTS
Polar solvents

COEFFICIENT OF OIL/WATER
N/D
Approximately

POUR POINT
176.00 F 80.00 C

MELTING POINT
170.60 F 77.00 C
Approximately

pH FACTOR
AP 6-9

CLOUD POINT
N/D F N/D C
Greater than

FLASH POINT
300.20 F 149.00 C

FLASH METHOD
Pensky-Martens Closed Cup

UPPER EXPLOSION LIMIT
N/D

LOWER EXPLOSION LIMIT
N/D

AUTO IGNITION TEMPERATURE
N/D F N/D C

Other
No other data available.

SECTION 10. STABILITY AND REACTIVITY

Stability

This product is stable at ambient temperatures and atmospheric pressures. It is not self-reactive and has a shelf life of greater than one year under sealed conditions. It is not sensitive to physical impact or static discharge. This product may decompose non-violently if exposed to temperatures above 100 C (212 F).

Incompatibilities

This product is incompatible with strong acids, strong oxidizers and strong bases.

Polymerization

Hazardous polymerization is not expected to occur.

Decomposition

Thermal decomposition products include toxic oxides of carbon and nitrogen.

Conditions to Avoid

Contact with strong acids, bases, and oxidizers and prolonged storage at elevated temperatures should be avoided. Product may dehydrate non-violently at temperatures above 100 C (212 F) to form amides.

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SECTION 11. TOXICOLOGICAL INFORMATION

Toxicological - Inhalation

Inhalation toxicity data are not available for this product or its components. Because of its low vapor pressure, significant amounts of airborne vapors are not expected at normal room temperatures. However, use at elevated temperatures may generate vapors which are irritating to the respiratory tract.

Inhalation Chronic Exposure

Chronic inhalation exposure effects of this product are not known. However, it may cause irritation of the respiratory tract.

Toxicological - Dermal

Dermal toxicity data are not available for this product. However, it is considered severely irritating and corrosive to skin based on animal tests with similar products.

Skin Contact - CHRONIC

Chronic dermal exposure effects for this product are not known. However, prolonged or repeated contact can cause severe skin irritation or burns with redness, swelling and blistering.

Toxicological - Eye

While this product has not been tested, it is expected to be severely irritating and corrosive to eyes based on animal tests with similar products.

Toxicological - Ingestion

Ingestion toxicity data are not available for this material. The acute oral LD50 (rat) for the diamine portion of the acetate salt is 1500 mg/kg (moderately toxic). The product is considered severely irritating and corrosive to tissue based on animal data for similar materials. Ingestion is expected to cause severe irritation or chemical burns of the mouth, throat, esophagus, stomach, and any parts of the gastrointestinal system that come in contact with the material.

Ingestion - CHRONIC

Chronic ingestion effects of this product are not known. However, ingestion can result in severe irritation or burns of the mouth, throat, esophagus and stomach.

CARCINOGENICITY/MUTAGENICITY

The carcinogenic/mutagenic properties of this material are not known.

Neither this material nor its components is classified as a carcinogen or suspect carcinogen by IARC, NTP, OSHA, or ACGIH.

REPRODUCTIVE EFFECTS

The reproductive toxicity of this product is not known.

NEUROTOXICITY

The neurotoxic effects of this product are not known.

Other Toxicological Effects

No other toxic effects for this product are known.

Target Organs

Overexposure to this product may affect the skin and eyes.

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SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

The ecological toxicity of this product is not known.

DISTRIBUTION

Other ecological information on this product is not known.

CHEMICAL FATE

Chemical fate information on this product is not known.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal

Material that cannot be used or chemically reprocessed and empty containers, except those designed for multiple use (returnable), should be disposed of in accordance with all applicable regulations. Product containers should be thoroughly emptied before disposal.

This product, if unused, is not a RCRA listed waste and does not meet the RCRA criteria for hazardous waste by characteristics. Waste generators are required to evaluate all waste material for compliance with RCRA and any local disposal procedures and regulations. Dispose of waste in accord with local, state, and federal regulations. Incineration may be used where permitted by regulations. NOTE: State and local regulations may be more stringent than federal regulations.

CONTAINER DISPOSAL

Containers should be cleaned of residual product before disposal. Empty containers should be disposed of in accordance with all applicable laws and regulations.

SECTION 14. TRANSPORT INFORMATION

SHIPPING DESCRIPTION

CORROSIVE SOLID, N.O.S.
(Contains Fatty Amine Acetate Salts)
UN 1759
Hazard Class 8, PG III
EMERGENCY RESPONSE GUIDE NO. 154

REQUIRED LABELS

Corrosive

ENVIRON. HAZARDOUS SUBSTANCE

This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix.

SECTION 15. REGULATORY INFORMATION

Component Proprietary fatty amine acetates is subject to the following

Environmental List

DSL Domestic Substance List-Canada
TSCA Toxic Subst. Cont. Act -listed

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SECTION 15. REGULATORY INFORMATION
(CONTINUED)

Component Proprietary fatty polyamine compounds is subject to the following

Environmental List

DSL	Domestic Substance List-Canada
TSCA	Toxic Subst. Cont. Act -listed

Component Organic acid is subject to the following

Environmental List

CERCLA	CERCLA Hazardous Substances
DSL	Domestic Substance List-Canada
MA. LIST	Massachusetts Substance List
NJ R-T-K	New Jersey R-T-K Hazard. Sub.
PA. LIST	Penn. Hazardous Substance List
SARA 302	SARA Title III, Section 302
TSCA	Toxic Subst. Cont. Act -listed

Component Proprietary fatty amine acetates is subject to the following

Environmental List

DSL	Domestic Substance List-Canada
TSCA	Toxic Subst. Cont. Act -listed

OTHER REGULATORY INFORMATION

No other regulatory information is available on this product.

WHMIS HAZARD CLASS
D-2B, E

HAZARD RATING SOURCE
HMIS

HEALTH
3

REACTIVITY
0

FLAMMABILITY
1

OTHER

SECTION 16. OTHER INFORMATION

OTHER INFORMATION

ARMAK is a registered trademark of Akzo Nobel Chemicals Inc.

CREATED BY

PRODUCT SAFETY 914/674-5000

Akzo Nobel Chemicals Inc.
MATERIAL SAFETY DATA SHEET

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ARMAX 1025

SECTION 16. OTHER INFORMATION
(CONTINUED)

KEY TO ABBREVIATIONS:

EQ=Equal

LT=Less Than

GT=Greater Than

AP=Approximately

TR=Trace

ND=No Data available

All information concerning this product under suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Akzo Nobel Chemicals Inc., however, makes no warranty as to the accuracy or sufficiency of such information under suggestions, as to the product's marketability or fitness for any particular purpose, or that any suggested use will not bridge any patent. Nothing contained herein shall be construed as granting or conceding any license under any patent. Buyer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purpose. The information contained herein supersedes all previously issued labels on the subject matter covered.



Akzo Chemie America

ARMAR CHEMICALS
300 S. Wacker Drive
Chicago, IL 60606

800-424-9300	EMPA # 1 HAZARD RATING 1 - Extreme	HEALTH 0	ENVIRONMENTAL 0
AKZO CHEMIE AMERICA 312-447-7990	3 - High 2 - Moderate 1 - Slight 0 - Minimal	1	0
BUS. NO. AKZO CHEMIE AMERICA 312-786-0400	Chronic Health Hazard (SEE SECT. 8)	0	04-03-86
		PRODUCT CODE NO. 171913	REVISED

MATERIAL SAFETY DATA SHEET

1	PRODUCT NAME - LABEL	Armak® 1458			CHEMICAL FAMILY	Proprietary			
	CHEMICAL NAME, SYNONYMS	Proprietary Nonionic Surfactant							
2	CAS NO.	Proprietary		TECA INV. NO.	Proprietary		FORMULA	Proprietary	
	HAZARDOUS INGREDIENTS		None				ACGIH TLV	OSHA PEL	
3	DOT SHIPPING NAME	Non-Regulated				DOT HAZARD CLASSIFICATION			
	IMCO CLASS	UN NO.	NA NO.	IATA NO.	CORROSIVE PER DOT				
4	INITIAL BOILING POINT	>300°C >572°F		MELTING/FREEZING POINT	<10°C <50°F		POUR POINT	ND °C	
	VAPOR PRESSURE mmHg	<1 @ 20 °C		VAPOR DENSITY	ND		SOLUBILITY IN WATER (% by weight)	Soluble	
	APPEARANCE & ODOR	Amber liquid with a slight, bland odor.							
	FLASH POINT	274 °C 525 °F		TEST METHOD	PMCC		FLAMMABLE LIMITS IN AIR	ND % by vol.	
5	EXTINGUISHING MEDIA	☐ Not Combustible ☒ Water fog or spray ☒ CO ₂ ☒ Dry Chemical ☐ Alcohol Foam ☒ Foam ☐ Earth or mud							
	SPECIAL FIRE FIGHTING PROCEDURES	None Known							
	UNUSUAL FIRE AND EXPLOSION HAZARDS	None Known							
	STABILITY	☒ Stable ☐ Unstable		CONDITIONS CONTRIBUTING TO INSTABILITY ☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination NA					
6	HAZARDOUS POLYMERIZATION	☒ Will Not Occur ☐ May Occur		INCOMPATIBILITY - AVOID CONTACT WITH ☐ Strong Acids ☐ Strong Alkalis ☒ Strong Oxidizers					
	HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (LIST)	CO (Possible Combustion Products)							
	CONDITIONS TO AVOID	☐ Ignition sources ☐ Temperatures above		°C °F NA					
	STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	☐ Keep upwind ☐ Avoid skin contact ☒ Flush with water ☒ Absorb with sand or inert material ☐ Neutralize ☒ Sweep or scoop out and remove ☒ Prevent spread of spill							
7	WASTE DISPOSAL - Consult federal, state, and local authorities for proper disposal procedures. UNDER RCRA THIS PRODUCT IS CLASSIFIED AS:	☐ Ignitable ☐ Corrosive ☐ Reactive ☐ EP Toxic ☐ Listed ☒ Not a RCRA hazardous waste, but see Supplement							
	REPORTABLE QUANTITY	UNDER CERCLA (Supplement) AQ - ND							

TOXICITY	DERMAL (SKIN) LD ₅₀ -ND - Based on animal tests, surfactants of this type are not considered primary skin irritants or corrosive.
	EYE Draize Score-ND - Based on animal tests, these surfactants are not considered eye irritants.
	INHALATION LC ₅₀ -ND - Not a problem at ambient temperatures.
	ORAL LD ₅₀ -ND - 10 g/kg (rats) showed no abnormal effects.
OTHER Unknown	
HEALTH HAZARD INFORMATION Effects of Over Exposure	DERMAL Prolonged contact may cause slight irritation and redness.
	EYE Prolonged contact may cause mild eye irritation.
	INHALATION Usually not a problem under normal use conditions.
	INGESTION Should not cause a major problem.
	10 DERMAL Wash contacted area with water.
Emergency First Aid	EYE CONTACT ☒ Immediately flush with water for at least 15 minutes. Contact lenses should be removed if the initial flush doesn't wash them out. ☒ Get medical attention if indicated.
	INHALATION ☒ Remove to fresh air ☒ If not breathing, give artificial respiration ☒ Give oxygen if needed ☒ Get medical attention if indicated
	INGESTION (NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON) ☒ Do not induce vomiting ☐ Induce vomiting ☒ Give plenty of water ☒ Get medical attention
	11 HANDS (GLOVE MATERIALS TO MINIMIZE CHEMICAL CONTACT) ☒ Neoprene ☐ Natural rubber ☐ Polyethylene ☐ Butyl rubber ☐ Polyvinyl alcohol ☐ Polyvinyl chloride
SPECIAL PROTECTION INFORMATION	Eyes Chemical splash goggle or face shield if splash hazard exists.
	VENTILATION REQUIREMENTS - Always maintain exposure below permissible exposure limits Usually not required under normal use conditions.
	RESPIRATOR TYPE - For reducing contaminant concentration in inhaled air ☐ Filter - dust, fume, mist ☐ Can or cartridge gas or vapor NA
	OTHER ☒ Safety shower and/or eye wash should be available
SPECIAL PRECAUTIONS	12 ☐ Do not store near combustibles ☐ Wash thoroughly after handling ☐ Do not get in eyes, on skin or clothing ☐ Do not breathe dust, vapor, mist, gas ☐ Keep container closed ☐ Keep from freezing ☐ Empty container may contain hazardous residues ☐ Keep away from heat, sparks, and open flames ☐ Use explosion proof equipment NA
	13 None
OTHER	

MATERIAL SAFETY DATA SHEET / FICHE SIGNALÉTIQUE

SECTION 1 - MATERIAL IDENTIFICATION AND USE / IDENTIFICATION DE LA MATIÈRE ET USAGE

MATERIAL NAME / IDENTIFIER - NOM / IDENTIFICATION DE LA MATIÈRE

TAPIOCA FLOUR

W.H.M.I.S. - NOT CONTROLLED

Manufacturer's name/Nom du fabricant :

HALLTECH INC.

Street address/Adresse :

485 Coronation Dr.

City / Ville

WEST HILL

Postal code / Code postal

M1E 2K2

Province

ONTARIO

Emergency phone no.

(416) 284-6111

Supplier's name / Nom du fournisseur :

HALLTECH INC.

Street address / Adresse

485 Coronation Dr.

City / Ville

WEST HILL

Postal code / Code postal

M1E 2K2

Province

ONTARIO

No De telephone d'urgence

(416) 284-6111

Chemical Name/Denomination chimique
TAPIOCA FLOUR

Chemical family/Famille chimique:

Chemical Formula/ Formule chimique

Trade Name / Appellation Commerciale :
TAPIOCA FLOUR

Molecular weight / Poids Moléculaire :
N/Ap

Material use / Utilisation de la matière :

SECTION 2 - HAZARDOUS INGREDIENTS OF MATERIAL / INGRÉDIENTS DANGEREUX DE LA MATIÈRE

HAZARDOUS INGREDIENTS/INGRÉDIENTS
DANGEREUX

%

C.A.S.

LD50

LC50

NONE - NOT A W.H.M.I.S. CONTROLLED PRODUCT.

LD50 & LC50 data are expressed in mg/kg & ppm respectively for rats the oral route and inhalation for 4 hours, unless otherwise specified

Les données LD50 et LC50 sont exprimées en mg/kg et ppm respectivement via voie orale et inhalation pour 4 heures pour rats sauf si spécifié ailleurs.

SECTION 3 - PHYSICAL DATA FOR MATERIAL / CARACTÉRISTIQUES DE LA MATIÈRE

Physical state / état physique :
POWDER

Odour and appearance/ Odeur et apparence :
LIGHT BROWN POWDER

Flashpoint (ppm)/Point de l'écoulement (ppm) :

Specific gravity / Densité relative :

Vapour pressure (mm)/Tension de vapeur (mm)

Vapour density (air = 1) Densité de vapeur (air = 1)

Evaporation rate/Taux d'évaporation :

Boiling point(C)/ Point d'ébullition (C) :

Freezing point(C)/ Point de congélation (C) :

Solubility in water (20C)/ Solubilité dans l'eau (20C)

% Volatile (by volume)/ % Volatile (par volume) :

pH :

Coeficient of water (20C)/ Coefficient de répartition
eau huile : N/Ap

SECTION 2: HAZARD IDENTIFICATION / RÈGLES D'INFORMATION SUR LE DANGER

Flammability / Inflammabilité yes/oui no/non : No

If yes under what conditions? / Si oui, dans quelles conditions? :

Means of extinction / Moyens d'extinction : WATER, CARBON DIOXIDE, OR FOAM

SPECIAL PROCEDURES / MARCHÉ À SUIVRE SPÉCIALE :

NONE

Flash point (C) & method / Point d'éclair (C) et méthode de détermination : > 150 DEG. C.

Upper explosion limit / Seuil maximal d'inflammabilité : N/Ap

Lower explosion limit / Seuil minimal d'inflammabilité (% by/par volume) : N/Ap

Autoignition temperature (C) / Température d'auto-inflammation (C) : N/Ap

Hazardous combustion products / Produits de combustion dangereux :

EXPLOSION DATA / DONNÉES SUR L'EXPLOSIBILITÉ

Sensitivity to mechanical impact / sensibilité aux chocs : No

Sensitivity to static discharge / sensibilité aux décharges électrostatiques : No

SECTION 3: HAZARD IDENTIFICATION / DONNÉES SUR LA REACTIVITE

Chemical stability / Stabilité chimique yes/oui no/non : Yes

If no under what conditions? / Non dans quelles conditions? :

Incompatibility to other substances, incompatibilité avec d'autres substances yes/oui no/non :

If so which ones? / Si oui avec lesquelles :

Reactivity and under which conditions / Réactivité - dans quelles conditions? : N/Ap

Hazardous decomposition products / Produits de décomposition dangereux : THERMAL DECOMPOSITION OR BURNING WILL PRODUCE CARBON MON

SECTION 4: TOXICOLOGICAL INFORMATION / PROPRIÉTÉS TOXICOLOGIQUES DE LA MATIÈRE

Route of entry / voie d'administration :

Skin contact / Contact avec la peau :

Skin absorption / Absorption par la peau :

Eye contact / Contact oculaire : YES

Inhalation acute / Inhalation aigüe :

Inhalation chronic / Inhalation chronique : YES

Ingestion :

Effects of acute exposure to material / Effets de l'exposition aigüe à la matière :

THIS MATERIAL IS NOT CONSIDERED HAZARDOUS BY HALLTECH INC. NONE KNOWN.

Effects of chronic exposure to material / Effets de l'exposition chronique à la matière :

None known

MATERIAL NAME / IDENTIFIER >TAPIOCA FLOUR

NOM / IDENTIFICATION DE LA MATIERE

LC50 of material (specify species & route) /
LC50 de la matiere (preciser l'espece et la voie d'administration) :
N/Av

LC50 of material (specify species & route) /
LC50 de la matiere (preciser l'espece et la voie d'administration) :
N/Av

Exposure (limits)/ limites d'exposition :N/Av

Irritancy of material / Propriete irritante de la matiere :N/Av

Sensitization of material/ Sensibilisation a la matiere :N/Av

Synergistic materials/ Matieres synergiques :N/Av

Carcinogenicity, reproductive effects, teratogenicity, mutagenicity/ Cancérogénicité, effets nécess sur la reproduction, tératogénicité, mutagénicité :

BASED ON AVAILABLE DATA. NONE EXPECTED.

SECTION 7 - PREVENTIVE MEASURES/ MEASURES PREVENTIVES

PERSONAL PROTECTIVE EQUIPMENT / MATERIEL PERSONNEL DE PROTECTION

Gloves (specify) Gants(preciser) :NONE REQUIRED

Eye (specify / Yeux(preciser) :SAFETY GLASSES

Respiratory (specify)/ Appareil respiratoire (preciser) :

Other(specify)/ Autres (preciser) :

Engineering controls(eg ventilation, enclosed process,specify)/ Mécanismes techniques(eg ventilation,operation en milieu fermé preciser) :
adequate ventilation

Leak and spill procedure/ Mesures en cas de fuites ou de déversement ::

KEEP SPECTATORS AWAY.

DRY POWDER SPILL: SWEEP UP OR VACUUM IMMEDIATELY AND PUT IN DISPOSABLE CONTAINER. WATER SOLUTION: APPLY ABSORBENT MATERIAL, SHOVEL UP AND THEN WASH AREA WITH WATER. PREVENT WASHINGS FROM ENTERING WATERWAYS.

Waste disposal/ Elimination des résidus :

SCOOP UP INTO CONTAINERS

USE GOVERNMENT APPROVED WASTE DISPOSAL COMPANY FOR REMOVAL.

Handling procedures and equipment/ Méthodes et Equipement pour la manutention :

Provide adequate ventilation. Avoid contact with skin and eyes.
Close container after each use.

Storage requirements/ Exigences d'entreposage :

STORE IN DRY PLACE

Special shipping information/ Renseignements spéciaux pour l'expédition :

SECTION 1: PREPARATION OF MATERIAL / PRÉPARATION DE LA MATIÈRE

Additional Information/ Renseignements supplémentaires :
W.H.M.I.S. - Non Controlled

SECTION 2: PREPARATION OF MATERIAL / PRÉPARATION DE LA MATIÈRE

Prepared by (group, department, etc)/ Préparé par (groupe, département, etc) :

Telephone number/ No de téléphone

Date :

R & D Department

(418) 284-6111

JAN. 1987

ADDITIONAL NOTES OR REFERENCES / NOTES ADDITIONNELLES OU RÉFÉRENCES:

Traces of residual monomer vapours can evolve when this product is heated during processing operations.
In such cases use local exhaust ventilation.

Most physical data have been obtained from the following reference sources:

1. Canadian Centre For Occupational Health & Safety (C.C.O.H.S.).
2. Sax, Irving, Dangerous Properties of Industrial Materials.
3. Raw Material Suppliers U.S.D.S.

N/Av = Not Available

N/Ap = Not Applicable

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