
Annexe 2 Fiches signalétiques des réactifs



Ciba[®] MAGNAFLOC[™] 10 Flocculant

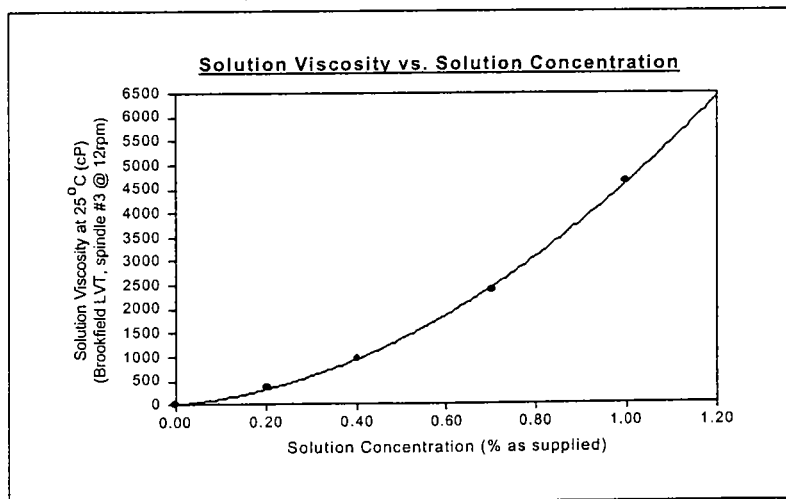
Anionic Granular Grade Polymer

Description MAGNAFLOC 10 is a high molecular weight, polyacrylamide based flocculant which exhibits a very low degree of anionic charge. MAGNAFLOC 10, once hydrated in water, reacts readily to provide superior floc formation and performance in a variety of solids/liquid separation processes. MAGNAFLOC 10 is supplied in a free-flowing granular form.

Principal Uses MAGNAFLOC 10 has been designed as a flocculant for a variety of municipal and industrial waste substrates. It has been proven especially effective for conditioning these substrates for solids sedimentation, thickening, and dewatering processes.

MAGNAFLOC 10 offers greatly improved solids/liquid separation efficiencies over a wide range of pH and is available in a variety of packaging for ease of handling and safety.

Typical Properties	Physical form	Off-white, free-flowing granules
	Bulk density	45 lbs./ft ³
	Particle size	10% > 780µm, 50% > 570µm, and 90% > 240µm
	Solution pH	6-8
	Solution Viscosity	See graph below



Application & Storage

Recommended solution concentrations:

Stock solution	0.25%-0.5%
Feed solution	0.01%-0.2%

Recommended storage periods:

Product as Supplied	Up to two years
Stock solution	2-5 days
Feed solution	1-3 days

Storage of the product and solutions for longer than the recommended periods may be acceptable under the correct conditions but could result in some loss of product efficiency. Product should be stored in a cool, dry place, and conditions of high temperature and high humidity should be avoided. Under such conditions, the hygroscopic nature of the product may result in excessive moisture up-take and product caking. Packages should be kept sealed when not in use. Further advice on solution preparation using Ciba Specialty Chemicals automated make-up systems is available, and details may be obtained on request.

Corrosive Properties

Corrosion towards most standard materials of construction is very low. Stainless steel, fiberglass, polyethylene, polypropylene and rubberized surfaces are recommended. In some cases, aluminum and galvanized surfaces can be adversely affected.

Packaging

MAGNAFLOC 10 is supplied in 55lb. (25kg.) bags, 1,102lb. (500kg.) tay bags, 1,543lb. (700kg.) tay bags, 2,000lb. (907kg.) tay bags, or in bulk by tanker delivery (40,000lb./18,149kg. maximum).

Spills

Spills of MAGNAFLOC 10 should be contained and disposed of in accordance with local regulations.

Discharges of product or solutions of product to waterways should be avoided since some polymeric products may have an adverse effect on the mucous membranes on fish gills.

Solutions of MAGNAFLOC 10 are very slippery.

Technical Service

Complete technical service is provided in the sale of MAGNAFLOC 10. This includes advice and full assistance in all aspects of product selection, laboratory testing, troubleshooting, and plant trials.

Health and Safety

MAGNAFLOC 10 exhibits a very low order of toxicity and does not present any abnormal problems in its handling or general use. Standard industrial safety procedures should be observed.

Detailed information on handling and any precautions to be observed in the use of the product(s) described in this leaflet can be found in our relevant Material Safety Data Sheets.

Warranty

The information contained in this leaflet is given in good faith but no liability is assumed nor is freedom from any patent owned by Ciba Specialty Chemicals or others implied. This information should not be taken to represent a specification for the product.

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MATERIAL SAFETY DATA SHEET

Ciba



I. PRODUCT IDENTIFICATION

Supplier:
Ciba Specialty Chemicals Canada Inc.
7030 Century Avenue
Mississauga, Ontario
L5N 2V8

24 hour Emergency Spill Response: (416) 254-9024
CANUTEC Emergency: (613) 996-6666
MSDS Inquiry Line: (905) 812-6152

Product Name:

MAGNAFLOC 10

Product Use: Flocculant
Chemical Family: Anionic polyacrylamide

II. REGULATORY INFORMATION

WHMIS Designation: Not WHMIS Controlled
DSL Status: All components listed on the DSL
TSCA Status: All components either exempt or listed on TSCA inventory
TDGA: Not Regulated

III. HAZARDOUS INGREDIENTS

No hazardous ingredients as per WHMIS Regulations

IV. PHYSICAL PROPERTIES

Appearance:	White granular powder	Odour Threshold:	Not applicable
Physical State:	Solid	Vapour Density:	Not applicable
Odour:	No significant odour	Evaporation Rate:	Not applicable
Solubility in Water:	Soluble, solubility limited by viscosity	Boiling Point:	~100 °C
Vapour Pressure:	Not applicable	Melting Point:	Not available
pH (1% solution):	6.5	Specific Gravity (H ₂ O=1):	~0.75
Coefficient of	Not available		
Water/Oil Distribution:			

V. FIRE AND EXPLOSION HAZARD

Flash Point: Not applicable
Combustibility: Not combustible at 35 °C
Upper Flammable Limit: Not available
Lower Flammable Limit: Not available

Auto Ignition Temperature:	Not available
Hazardous Combustion Products:	Oxides of carbon and nitrogen, various hydrocarbons, and/or ammonia which may be irritating or harmful.
Explosion Data:	Danger! Explosion Risk! This product can form an explosive dust/air mixture. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity.
Extinguishing Media:	Carbon dioxide, dry chemical, foam, in preference to a water spray.
Special Fire Fighting Procedures:	Water may create a slip hazard with product. Use self-contained breathing apparatus and full protective equipment.

VI. REACTIVITY

Materials to Avoid:	Avoid contact with strong oxidants such as liquid chlorine, enriched gaseous or liquid oxygen, and sodium or calcium hypochlorite.
Conditions to Avoid:	Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.
Hazardous Polymerization:	Will not occur
Stability:	Stable
Hazardous Decomposition Products:	For decomposition products, see Section V.

VII. TOXICOLOGICAL PROPERTIES OF PRODUCT

Route of Entry:	Inhalation
Effects of Exposure:	Eye contact may cause slight irritation and/or redness. Repeated or prolonged exposure may cause slight skin irritation. Inhaled dust may cause respiratory irritation.
Medical Conditions Aggravated By Exposure:	Existing respiratory conditions
Exposure Limit (TWA, 8-hour, total inhalable dust):	ACGIH: 10 mg/m ³ OSHA PEL: 10 mg/m ³
Oral LD50:	Acute oral LD50 (rat) is expected to be >2,000 mg/kg (by analogy to similar materials).
Dermal LD50:	Not available
Inhalation LC50:	Not available
Sensitization:	Not a known sensitizer
Carcinogenicity:	Not a known carcinogen
Synergistic Materials:	None known
Reproductive Toxicity:	None known
Teratogenicity:	Not a known teratogen
Mutagenicity:	Not a known mutagen

VIII. PREVENTIVE MEASURES

PROTECTIVE EQUIPMENT

Eye Protection:	Use chemical goggles which meet CSA standards to protect against dust particles.
Respiratory Protection:	Use NIOSH approved dust respirator.
Clothing:	Wear gauntlets and apron, especially for transfer of bulk quantities of concentrated product.
Gloves:	Wear impervious gloves as a standard procedure.
Footwear:	Wear chemical resistant footwear.
Ventilation:	Work in well ventilated areas. Provide mechanical ventilation to prevent dust concentrations.

HANDLING

WARNING! Dust generated in handling of this product can be explosive if sufficient quantities are mixed in air, in which case ignition sources should be avoided. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. Remove contaminated clothing; launder or dry-clean before reuse. Wash thoroughly with soap and water after using. For industrial use only. Slip hazard when wet.

STORAGE INFORMATION

Material is slippery when wet. Store in the original container, securely closed, in a cool and dry location. Avoid extremes of temperature and ignition sources.

SPILLS, LEAKS

Product becomes slippery and difficult to handle when wet; spills are best handled while still dry. Sweep up and collect dry product. Absorb wet product with vermiculite or other inert material and place in closable container for disposal. Scrub area with dry absorbent and then flush residue with water to eliminate slip hazard. Dispose in accordance with local, provincial and federal regulations.

IX. EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with water for at least 15 minutes. Get medical attention.
SKIN CONTACT: Wash affected areas with plenty of water and soap, if available, for several minutes. Get medical attention if irritation occurs. Contaminated clothing should be washed before re-use.
INHALATION: Remove to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
INGESTION: If conscious, give 2 to 4 glasses of water to drink, but do not induce vomiting. Get medical attention. Do not give anything by mouth to an unconscious or convulsing person.

X. ECOLOGICAL INFORMATION

From data obtained for an analogous product, the following results are expected:

LC50, 96-hr, Freshwater fish (Brachydanio rerio): 357 mg/L
EC50, 48-hr, Daphnia magna: 212 mg/L
EC50, 72-hr, Freshwater unicellular algae (Chlorella vulgaris): >1000 mg/L
EC50, 24-hr, Bacteria (Pseudomonas putida): 892 mg/L

XI. PREPARATION INFORMATION

Prepared By: M. Dorcas

Date Revised: January 11, 2000

THIS PRODUCT WILL NOT BE SOLD FOR USE IN PRODUCTS FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR ABRADED SKIN OR IMPLANTATION WITHIN THE HUMAN BODY IS SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF SUCH POTENTIAL USES, CIBA SPECIALTY CHEMICALS CANADA INC. IS NOT ABLE TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT, HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.





MAGNAFLOC® 368

Cationic flocculant

Description	MAGNAFLOC® 368 is a low molecular weight, highly cationic flocculant supplied as a free flowing free bead.	
Principal Uses	<p>The main area of application for MAGNAFLOC® 368 is as a primary coagulant or clarification aid when used alone or in conjunction with a high molecular weight anionic product.</p> <p>The clarification of dispersed clay fines in coal processing and the sedimentation of iron ore at high pH are two examples. Other areas of application include horizontal belt filtration and centrifugation. In these applications MAGNAFLOC® 368, used in conjunction with a high molecular weight anionic flocculant, produces strong compact flocs which are shear resistant and give good dewatering characteristics. Dose level depends upon the application but normally lies in the range of 2-200g per tonne of dry solid flocculated.</p>	
Typical Properties	Physical Form	White free flowing bead
	Particle Size	95% < 850 µm
	Bulk Density	0.8 g/cm ³
	pH of 1% solution at 25°C	6.0
	Viscosity at 25°C	See table

Application & Storage Recommended solution concentrations:

Stock solution	0.5 - 2.0% max
Feed solution	0.05 - 1.0% max

Recommended storage periods:

Solid	up to two years
Stock solution	1-2 days

Storage of polymer should be in a cool, dry place.

Details on preparation and feeding can be obtained from a Ciba Specialty Chemicals Representative

MAGNAFLOC® 368 - Solution viscosity data (Fann viscometer – 25°C – solvent – deionised water)						
MAGNAFLOC® 368 concentration (%)	Shear rate (sec ⁻¹)					
	5.11	10.22	170	340	511	1022
	Viscosity (cP)					
1.0	100	75	12	10	9	8
0.5	100	75	9	8	7	6

Shipping and Handling

MAGNAFLOC® 368 is supplied in 25kg nett plastic bags shrinkwrapped onto a pallet suitable for export shipment. The product can also be supplied via intermediate big bags or bulk tanker. Specific details of bag and tanker sizes can be obtained on request.

Corrosive Properties

MAGNAFLOC® 368 is mildly corrosive towards mild steel, cast iron, aluminium and zinc surfaces and the use of these should be avoided.

Recommended materials of construction for preparation tanks, dilution tanks etc., include stainless steel, fibre glass, polyethylene and polypropylene.

Technical Service

Advice and assistance in the running of laboratory and plant tests to select the correct flocculant and determine the best application is given by representatives of Ciba Specialty Chemicals, who are experienced in mineral processing applications.

Health and Safety

MAGNAFLOC® 368 exhibits a very low order of oral toxicity and does not present any abnormal problems in its handling or general use. However as with all cationic polyelectrolytes the product exhibits toxicity towards fish. It is important that precautions are taken where the product may come into direct contact with fresh water courses, streams and rivers.

Detailed information on handling and any precautions to be observed in the use of the product(s) described in this leaflet can be found in our relevant Health and Safety information sheet.

Warranty

The information contained in this leaflet is given in good faith but no liability is assumed nor is freedom from any patent owned by Ciba Specialty Chemicals or others implied. This information should not be taken to represent a specification for the product.

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MATERIAL SAFETY DATA SHEET



Ciba

I. PRODUCT IDENTIFICATION

Supplier:
Ciba Specialty Chemicals Canada Inc.
7030 Century Avenue
Mississauga, Ontario
L5N 2V8

24 hour Emergency Spill Response: (416) 254-9024

CANUTEC Emergency: (613) 996-6666

MSDS Inquiry Line: (905) 812-6152

Product Name:

MAGNAFLOC 368

Product Use: Flocculant
Chemical Family: Organic cationic polyelectrolyte

II. REGULATORY INFORMATION

WHMIS Designation: Not WHMIS Controlled
DSL Status: All components listed on the DSL
TSCA Status: All components either exempt or listed on TSCA inventory
TDGA: Not Regulated

III. HAZARDOUS INGREDIENTS

Ingredients: CAS NUMBER: CONCENTRATION: LD50: LC50:

No hazardous ingredients as per WHMIS Regulations.

IV. PHYSICAL PROPERTIES

Appearance:	White granular powder	Odour Threshold:	Not available
Physical State:	Solid	Vapour Density:	Not applicable
Odour:	No significant odour	Evaporation Rate:	Not applicable
Solubility in Water:	Soluble	Coefficient of Water/Oil Distribution:	Not available
Vapour Pressure:	Not applicable	Melting Point:	Not available
pH (1% solution):	~6 at 25°C	Specific Gravity (H ₂ O=1):	0.8
Boiling Point:	Not applicable		

V. FIRE AND EXPLOSION HAZARD

Flash Point:	Not applicable
Upper Flammable Limit:	Not Available
Lower Flammable Limit:	Not Available
Auto Ignition Temperature:	Not Available

Hazardous Combustion Products: Oxides of carbon and nitrogen
Explosion Data: Danger! Explosion Risk! This product can form an explosive dust/air mixture. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity
Extinguishing Media: Carbon dioxide, dry chemical, foam, or water spray
Special Fire Fighting Procedures Water may create a slip hazard with product. Use self-contained breathing apparatus and full protective equipment.

VI. REACTIVITY

Materials to Avoid: Avoid contact with strong oxidants and reactive chemicals.
Conditions to Avoid: Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.
Hazardous polymerization: Will not occur
Stability: Stable
Hazardous Decomposition Products: For decomposition products, see Section V.

VII. TOXICOLOGICAL PROPERTIES OF PRODUCT

Route of Entry: Inhalation, eye contact
Effects of Exposure: Eye contact may cause irritation and/or redness. Inhaled dust may cause some respiratory irritation.
Medical Conditions Aggravated By Exposure: Existing respiratory and skin conditions.
Exposure Limit (TWA, 8-hour, total inhalable dust): ACGIH: 10 mg/m³
 OSHA PEL: 10 mg/m³
Oral LD50: Acute oral LD50 (rat) is expected to be >2,000 mg/kg (by analogy to similar products).
Dermal LD50: Not available
Inhalation LC50: Not available
Sub-chronic Toxicity: Polydimethyldiallylammonium chloride: Male and female rats were exposed to 100 and 200 mg/kg/bw/day for 6 months. Under the conditions of this experiment, the No Effect Level of polydimethyldiallylammonium chloride in rats is below 1000 mg/kg/day.
 Adipic Acid: Male and female rats exposed to adipic acid in the form of aerosol dust (126 ug/L) for 6 hours/day for 15 days showed no signs of toxicity.
Sensitization: Not a known sensitizer
Carcinogenicity: Not a known carcinogen
Synergistic Materials: None known.
Teratogenicity: Not a known teratogen
Mutagenicity: Not a known mutagen

VIII. PREVENTIVE MEASURES

PROTECTIVE EQUIPMENT

Eye Protection: Use chemical goggles which meet CSA standards to protect against dust particles.
Respiratory Protection: Use NIOSH approved dust respirator
Clothing: Wear gauntlets and apron, especially for transfer of bulk quantities of concentrated product.
Gloves: Wear impervious gloves as a standard procedure.
Footwear: Wear chemical resistant footwear.
Ventilation: Work in well ventilated areas. Provide mechanical ventilation to prevent dust concentrations.

HANDLING

WARNING! Dust generated in handling of this product can be explosive if sufficient quantities are mixed in air, in which case ignition sources should be avoided. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. Remove contaminated clothing; launder or dry-clean before reuse. Wash thoroughly with soap and water after using. For industrial use only. Slip hazard when wet.

STORAGE INFORMATION

Material is slippery when wet. Store in the original container, securely closed, in a cool and dry location. Avoid extremes of temperature and ignition sources.

SPILLS, LEAKS

Product becomes slippery and difficult to handle when wet; spills are best handled while still dry. Sweep up and collect dry product. Absorb wet product with vermiculite or other inert material and place in closable container for disposal. Scrub area with dry absorbent and then flush residue with water to eliminate slip hazard. Dispose in accordance with local, provincial and federal regulations.

IX. EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT: Flush eyes with water for at least 15 minutes. Get medical attention.
SKIN CONTACT: Wash affected areas with plenty of water and soap, if available, for several minutes. Get medical attention if irritation occurs. Contaminated clothing should be washed before re-use.
INHALATION: Remove to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
INGESTION: If conscious, give 2 to 4 glasses of water to drink, but do not induce vomiting. Get medical attention. Do not give anything by mouth to an unconscious or convulsing person.

X. ECOLOGICAL INFORMATION

This product contains polymer(s) that may be toxic to aquatic organisms when tested in pure (distilled) water. Toxicity is greatly reduced by particles in natural water.

Fish Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
LC50, 96-hour, Rainbow Trout: 0.42 mg/L
LC50, 96-hour, Fathead Minnow, Bluegill sunfish: 0.42 - 1.28 mg/L
Invertebrate Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
LC50, 48-hour, Daphnia: 0.33 mg/L
Acute Algae Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
EC50, 72-hour: 0.16 mg/L
NOEC, 72-hour: 0.065 mg/L

XI. PREPARATION INFORMATION

Prepared By: M. Dorcas

Date Revised: December 6, 1999

THIS PRODUCT WILL NOT BE SOLD FOR USE IN PRODUCTS FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR ABRADED SKIN OR IMPLANTATION WITHIN THE HUMAN BODY IS SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF SUCH POTENTIAL USES, CIBA SPECIALTY CHEMICALS CANADA INC. IS NOT ABLE TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT, HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.



MATERIAL SAFETY DATA SHEET

Ciba



I. PRODUCT IDENTIFICATION

Supplier:
Ciba Specialty Chemicals Canada Inc.
7030 Century Avenue
Mississauga, Ontario
L5N 2V8

24 hour Emergency Spill Response: (416) 254-9024
CANUTEC Emergency: (613) 996-6666
MSDS Inquiry Line: (905) 812-6152

Product Name: **MAGNAFLOC 368**

Product Use: Coagulant
Chemical Family: Organic cationic polyelectrolyte

II. REGULATORY INFORMATION

WHMIS Designation: Not WHMIS controlled
DSL Status: All components listed on the DSL
TSCA Status: All components either exempt or listed on TSCA inventory
TDGA: Not regulated

III. HAZARDOUS INGREDIENTS

No hazardous ingredients as per WHMIS Regulations.

IV. PHYSICAL PROPERTIES

Appearance:	White granular powder	Odour Threshold:	Not available
Physical State:	Solid	Vapour Density:	Not applicable
Odour:	No significant odour	Evaporation Rate:	Not applicable
Solubility in Water:	Soluble	Coefficient of Water/Oil Distribution:	Not available
Vapour Pressure:	Not applicable	Melting Point:	Not available
pH (1% solution):	~6 at 25°C	Specific Gravity (H ₂ O=1):	0.8
Boiling Point:	Not applicable		

V. FIRE AND EXPLOSION HAZARD

Flash Point: Not applicable
Upper Flammable Limit: Not available
Lower Flammable Limit: Not available
Auto Ignition Temperature: Not available
Decomposition Temperature: Not available
Hazardous Combustion Products: Oxides of carbon and nitrogen

Explosion Data: Danger! Explosion Risk! This product can form an explosive dust/air mixture. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accord with accepted engineering practices in process operations capable of generating dust and/or static electricity

Extinguishing Media: Carbon dioxide, dry chemical, foam, in preference to a water spray

Special Fire Fighting Procedures: Water may create a slip hazard with product. Use self-contained breathing apparatus and full protective equipment.

VI. REACTIVITY

Materials to Avoid: Avoid contact with strong oxidants and reactive chemicals.

Conditions to Avoid: Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.

Hazardous polymerization: Will not occur

Stability: Stable

Hazardous Decomposition Products: For decomposition products, see Section V.

VII. TOXICOLOGICAL PROPERTIES OF PRODUCT

Route of Entry: Inhalation, eye contact

Effects of Exposure: Eye contact may cause irritation and/or redness. Repeated or prolonged exposure may cause slight skin irritation. Inhaled dust may cause some respiratory irritation.

Medical Conditions Aggravated: Existing respiratory and skin conditions.

By Exposure:

Exposure Limit (TWA, 8-hour, total inhalable dust): ACGIH: 10 mg/m³
OSHA PEL: 10 mg/m³

Oral LD50: Acute oral LD50 (rat) is expected to be >2,000 mg/kg (by analogy to similar products).

Dermal LD50: Not available

Inhalation LC50: Not available

Sub-chronic Toxicity: Polymer Propenaminium,dimethypropenyl, Cl: A six-month study with rats at doses of 1000 mg/kg/day and 2000 mg/kg/day showed cellular effects in kidneys and lungs. Both test concentrations also reduced body weight gain. The No Effect Concentration is below 1000 mg/kg/day.

Sensitization: Not a known sensitizer

Carcinogenicity: Not a known carcinogen

Synergistic Materials: None known

Reproductive Toxicity: None known

Teratogenicity: Not a known teratogen

Mutagenicity: Not a known mutagen

VIII. PREVENTIVE MEASURES

PROTECTIVE EQUIPMENT

Eye Protection: Use chemical goggles which meet CSA standards to protect against dust particles.

Respiratory Protection: Use NIOSH approved dust respirator

Clothing: Wear gauntlets and apron, especially for transfer of bulk quantities of concentrated product.

Gloves: Wear impervious gloves as a standard procedure

Footwear: Wear chemical resistant footwear.

Ventilation: Work in well ventilated areas. Provide mechanical ventilation to prevent dust concentrations.

HANDLING

WARNING! Dust generated in handling of this product can be explosive if sufficient quantities are mixed in air, in which case ignition sources should be avoided. In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid contact with eyes and prolonged or repeated skin contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. Remove contaminated clothing; launder or dry-clean before reuse. Wash thoroughly with soap and water after using. For industrial use only. Slip hazard when wet.

STORAGE INFORMATION

Material is slippery when wet. Store in the original container, securely closed, in a cool and dry location. Avoid extremes of temperature and ignition sources.

SPILLS, LEAKS

Product becomes slippery and difficult to handle when wet; spills are best handled while still dry. Sweep up and collect dry product. Absorb wet product with vermiculite or other inert material and place in closable container for disposal. Scrub area with dry absorbent and then flush residue with water to eliminate slip hazard. Dispose in accordance with local, provincial and federal regulations.

IX. EMERGENCY AND FIRST AID PROCEDURES

- Eye contact: Flush eyes with water for at least 15 minutes. Get medical attention.
- Skin contact: Wash affected areas with plenty of water and soap, if available, for several minutes. Get medical attention if irritation occurs. Contaminated clothing should be washed before re-use.
- Inhalation: Remove to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.
- Ingestion: If conscious, give 2 to 4 glasses of water to drink, but do not induce vomiting. Get medical attention. Do not give anything by mouth to an unconscious or convulsing person.

X. ECOLOGICAL INFORMATION

From tests on a product range, toxicity to fish (96 hour LC50), when tested in pure water, <10 ppm. When tested in water with more than 10 ppm total dissolved organic carbon, aquatic LC50 is increased by about 100 fold. Acute effects on aquatic organisms are entirely due to the cationic charge of the polymer, which is completely neutralised in natural water courses by irreversible adsorption onto particles, hydrolysis and dissolved organic carbon.

- Fish Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
LC50, 96-hour, Rainbow Trout: 0.42 mg/L
LC50, 96-hour, Fathead Minnow, Bluegill sunfish: 0.42 - 1.28 mg/L
- Invertebrate Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
LC50, 48-hour, Daphnia: 0.33 mg/L
- Acute Algae Toxicity: For Polymer Propenaminium, dimethylpropenyl, Cl:
EC50, 72-hour: 0.16 mg/L
NOEC, 72-hour: 0.065 mg/L

XI. PREPARATION INFORMATION

Prepared By: M. Dorcas

Date Revised: May 22, 2002

THIS PRODUCT WILL NOT BE SOLD FOR USE IN PRODUCTS FOR WHICH PROLONGED CONTACT WITH MUCOUS MEMBRANES OR ABRADED SKIN OR IMPLANTATION WITHIN THE HUMAN BODY IS SPECIFICALLY INTENDED. BECAUSE OF THE WIDE RANGE OF SUCH POTENTIAL USES, CIBA SPECIALTY CHEMICALS CANADA INC. IS NOT ABLE TO RECOMMEND THIS MATERIAL AS SAFE AND EFFECTIVE FOR SUCH USES AND ASSUMES NO LIABILITY FOR ANY SUCH USES. THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED UPON DATA BELIEVED TO BE CORRECT, HOWEVER, NO GUARANTEE OR WARRANTY OF ANY KIND EXPRESSED OR IMPLIED IS MADE WITH RESPECT TO THE INFORMATION CONTAINED HEREIN.