

COMPANY IDENTIFICATION

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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

Trade Name: Certonal
Acota Product ID: Certonal FC-9179 (FC732 concentrate)
Grade: 13% solids w/w

2. COMPOSITION INFORMATION ON INGREDIENTS

| <u>Ingredient name and classification</u> | <u>CAS No.</u> | <u>Conc.</u> |
|--|----------------|--------------|
| Fluoroacrylate polymer + (6251P) | Trade Secret | 13 % |
| Fluorinated chemical liquid EU Hazard Symbols and Risk Phrases: R53 | 163702-08-7 | 20 – 80 % |
| Fluorinated chemical liquid EU Hazard Symbols and Risk Phrases: R53 | 163702-07-6 | 20 – 80 % |

3. HAZARDS IDENTIFICATION

Critical hazards:

May cause long term effects in the aquatic environment

4. FIRST-AID MEASURES

Eye Contact: Immediately flush eyes with large amounts of water. Get immediate medical attention.
Skin contact: Wash affected area with soap and water

Inhalation: If signs or symptoms occur, remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult get immediate medical attention.

Ingestion: Drink two glasses of water. Call a medical doctor.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing media: Non flammable

Exposure hazards: Exposure to extreme heat can give rise to thermal decomposition.

Fire Fighting procedures: When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self contained positive pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms, waist and leg, face mask, and protective covering for exposed areas of the head. No unusual effects are anticipated during fire extinguishing operations. Avoid breathing the products and substances that may result from thermal decomposition of the product or the other substances in the fire zone. Keep containers cool with water spray when exposed to fire to avoid rupture.

Special Instructions: Flammability of material at elevated temperature, pressure or humidity has not been fully characterized.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Observe precautions from other sections.

Methods for cleaning up: Ventilate area. Contain spill. Cover with absorbent material. Collect spilled material. Clean up residue with appropriate organic solvent. Read and follow safety precautions on the solvent label and health and safety data sheet. Place in a metal container. Seal the container.

7. HANDLING AND STORAGE

Special instructions: Flammability of material at elevated temperature, pressure, or humidity has not been fully characterized.

Precautions for safe storage: Store under normal warehouse conditions.

Explosion Prevention: Non-flammable.

Precautions for Safe Handling: Observe precautions in other sections.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

- Eye protection: As a good industrial hygiene practice: Wear safety glasses with side shields or vented goggles.
- Hand protection: Wear appropriate gloves when handling this material. A pair of gloves made from the following materials are recommended: Butyl rubber.
- Skin protection: Avoid skin contact.
- Respiratory protection: Avoid inhalation of airborne material. Select one of the following respirators based on airborne concentration of contaminants and in accordance with national regulations: Half mask organic vapour respirator with dust/mist purifier.
- Ingestion: Not an expected route of exposure.
- Recommended ventilation: Use with appropriate local exhaust ventilation. Use in a well ventilated area. Provide sufficient ventilation to maintain emissions below recommended exposure limits. If exhaust ventilation is not adequate, use appropriate respiratory protection.

METHYL NONAFLUOROISOBUTYL ETHER (163702-08-7)

Exposure limits:
Acota TWA Exposure limit: 700 ppm

METHYL NONAFLUOROBUTYL ETHER (163702-07-6)

Exposure limits:
Acota TWA Exposure limit: 700 ppm

FLUOROACRYLATE POLYMER + (6251P) (-----)

Exposure limits: None defined.

9. PHYSICAL AND CHEMICAL PROPERTIES

| PROPERTY | VALUE |
|--------------------------------|---|
| Appearance | Colourless clear liquid with slight ethereal odour. |
| Evaporation rate | 49 BuOAc=1 |
| Boiling point | 61°C (typical) |
| Vapour pressure | Approximately 170mm Hg at 20°C |
| Vapour density | 8.6 Air=1 |
| Percent volatile | 90 – 99.9 % |
| Flashpoint | Not flammable (Closed cup) |
| Flammable limits | LEL: N/A UEL: N/A |
| Autoflammability | Not applicable |
| pH | Not applicable |
| Specific gravity | 1.5 g/ml |
| Solubility in water | Insoluble |
| Solubility in organic solvents | Soluble in fluorinated solvent materials |

10. STABILITY AND REACTIVITY

- Materials to avoid: Strong bases. Heat. As a general precaution avoid exposure to temperatures above the boiling point.
- Hazardous decomposition: Hydrogen fluoride has an ACGIH threshold of 3 parts per million parts of air, as a ceiling limit an OSHA PEL of 3ppm of hydrogen fluoride as an eight hour time-weighted average and 6 ppm of hydrogen fluoride as a Short Term Exposure Limit.

11. TOXICOLOGICAL INFORMATION

- Effects from eye contact: Mild eye irritation: signs / symptoms can include redness, swelling, pain, tearing and hazy vision.
- Effects from skin contact: No adverse health effects are expected from skin contact. Mild skin irritation (after prolonged and repeated contact): signs / symptoms can include redness, swelling and itching.
- Effects from Inhalation: Health effects from inhalation are not expected unless the product is over heated and decomposition occurs.
- Effects from ingestion: Ingestion is not a likely route of exposure to this product. No information is available regarding the effects from swallowing this material.
- Other Effects and Information: If the product is exposed to extreme conditions of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur. The odour threshold ifor HF is 0.04ppm, providing good warning properties for exposure. Perfluoroisobutylene has an ACGIH threshold limit value of 0.01 parts per million parts of air as a ceiling limit or 0.082 milligrams per cubic metre as a ceiling limit.

SUMMARY OF TOXICITY DATA FOR MEHYL NONAFLUOROISOBUTYL AND METHYLNONAFLUOROBUTYL ETHER COMPOUNDS:-

Acute Inhalation Lethal Concentration: > 100,000 ppm (rat, 4 hour)
Oral toxicity: Practically non-toxic (LD50 5g/kg in albino rat)
Development toxicity: No abnormal effects observed.
Mutagenicity: Not a mutagen in reverse mutation or chromosomal aberration assay.
Cardiac sensitisation: No signs of sensitisation at exposures up to 100,000 ppm
Primary Dermal Irritation: Minimally irritating.
Primary Ocular Irritation: Practically non-irritating.
Dermal sensitisation: Not a skin sensitiser

12. ECOLOGICAL INFORMATION

- Other Effects and Information: Zero ozone depletion potential (ODP)
4.1 year atmospheric lifetime.
500 Global Warming Potential (GWP) (100ITH, IPCC94)
- Aquatic Toxicity 96-Hr LC50 for Fathead minnow (*Pimephales promelas*) 96 hr
LL50: = > 7.9 mg/L (mean measured concentrations, limit of
solubility in study) NOEC for Fathead minnow (*Pimephales
promelas*) = 7.9 mg/L based on mortality. These results indicate that
this product has insignificant toxicity to fathead minnows at it's
solubility limit.
- 48 hr EC50 for Water flea (*Daphnia magna*) = > 10mg/L (mean
measured concentrations, limit of solubility in study) NOEC for
Water flea (*Daphnia magna*) = 6.7mg/L (mean measured
concentrations). These results indicate that this product has
insignificant toxicity to water fleas at it's solubility limit.
- 96 hr ErC50 for Algae (*Selenastrum capricornutum*) = 8.9mg/L
mean measured concentrations, limit of solubility in study) NOEC
(growth) for Algae (*Selenastrum capricoruntum*) = 8.9 mg/L mean
measured concentrations. These results indicate that this product
has insignificant toxicity to algae at its solubility limit.
- Definitions LC50 = Median Lethal Concentration – It is the concentration
necessary to kill 50% of the test species exposed to it in a specified
time.
- EC50 = Median Effective Concentration – It is the concentration of
a substance necessary to produce the biological effect under study
in 50% of the test species exposed to it.
- ErC50 = Median Effective Concentration as determined by
measuring the average specific growth rate.

13. DISPOSAL CONSIDERATIONS

- Waste treatment: Incinerate in an appropriately licensed industrial or commercial
facility in the presence of a combustible material. Combustion
products will include hydrogen fluoride. Since regulations vary
consult applicable regulations or authorities before disposal.

14. TRANSPORT INFORMATION

UN Number: Not restricted for transportation.

UK Road / Sea Freight (IMO) Classification:

Substance Identification Number: Not applicable

Class: Not applicable

Packing Group: Not applicable

Proper Shipping Name: Not applicable

CDG Road: Not applicable

ADR / RID Classification

Class: Not applicable

Item number: Not applicable

ICAO / IATA Classification

Class: Not applicable

Sub-risk: Not applicable

Packing Group: Not applicable

Proper Shipping Name: Not applicable

Specific hazards: Product not dangerous for transportation

Packaging: Product normally shipped in glass or steel containers

15. REGULATORY INFORMATION

Symbol(s): None

Risk Phrases: May cause long term effects in the aquatic environment.

Safety Phrases: Avoid contact with the skin and eyes. In case of contact with the eyes, rinse immediately with plenty of water and seek medical advice. After contact with the skin, wash immediately with plenty of soap and water. If symptoms continue after breathing vapour remove person to fresh air. If symptoms continue call a medical doctor. Use appropriate containment to avoid environmental contamination.

CEE Directive 67/548 and following amendments

Classification

Classification Type: Not required

Hazard class: None

Labelling

Trade Name: Certonal FC-9179 or F-9179

Grades: N/A

Hazard Symbol: None

Risk phrases: None

Safety Phrases: None

16. OTHER INFORMATION

The following UK Regulations as amended may affect the product as supplied: The Chemicals (Hazard Information and Packaging for supply) Regulations, as amended. The Carriage of Dangerous Goods (Classification, Packaging and Labelling) and use of Transportable Pressure Receptacles Regulations 1996, as amended. Carriage of Dangerous Goods by Road Regulations, 1996, as amended. The Petroleum (Consolidation) Act 1928. The Control of Substances Hazardous to Health Regulations 1999 as amended. The Special Waste Regulations as amended. The Environmental Protection Act, 1990. The Health and Safety at Work Act. 1974.

The information contained in this safety data sheet is for safety purposes only. It is given in good faith based on the best knowledge and experience of the company at the date of issuing. The Company will not be responsible for damage caused by the use of this product in applications for which it is not intended or for conditions of use outside its control.

Intended use of Product: Electrical contact coating and anti-migration barrier.

Date last updated: Friday, 23rd January 2004.

By: Steve Henly

Change notes:

001 – issued