

### SECTION 1: Identification

#### 1.1. Product identifiers

Product Code	: KumigF02
Substance name	: 1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate)
Synonym	: Selectfluor II, N-Fluoro-N'-methyl-triethylenediamine bis(tetrafluoroborate)
Trademark	: Fluora
CAS No	: 159269-48-4
Formula	: C <sub>7</sub> H <sub>15</sub> B <sub>2</sub> F <sub>9</sub> N <sub>2</sub>
Reach No.	: Exempted from registration

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified Uses	: Laboratory chemicals Manufacture of substances Scientific research and development
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#### 1.3. Details of the supplier of the safety data sheet

Kumidas SA  
Avenue Louise 279,1050,Brussels, Belgium  
T: +32(0) 2 699 82 36 F: +32(0) 2 699 82 36 40  
E: [info@kumidas.com](mailto:info@kumidas.com) W: [www.kumidas.com](http://www.kumidas.com)

#### 1.4. Emergency telephone number

Emergency Phone# : +32(0)484 58 71 75

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No 1272/2008

Self-heating substances (Category 2), H252  
Acute toxicity, Oral (Category 3), H301  
Skin sensitisation (Category 2), H315  
Serious eye damage (Category 1), H318  
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335  
For the full text of the H-Statements mentioned in this Section, see Section 16.

#### 2.2. Label elements

##### Labeling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word : Danger

Hazard statements : H252 – Self-heating in large quantities; may catch fire.  
H301 – Toxic if swallowed.  
H315 – Causes skin irritation.  
H318 – Causes serious eye damage.  
H335 – May cause respiratory irritation.

Precautionary statements : P235+P410 – Keep cool. Protect from sunlight.  
P261 – Avoid breathing dust.  
P280 – Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard Statements (EU) : None

#### 2.3. Other hazards

None

# 1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate)

## Safety Data Sheet

According to Regulation (EC) No. 1907/2006

### SECTION 3: Composition/information on ingredients

#### 3.1. Substances

Substance type	: Mono-constituent
Formula	: C <sub>7</sub> H <sub>15</sub> B <sub>2</sub> F <sub>9</sub> N <sub>2</sub>
Molecular weight	: 319.82 g/mol
Hazardous ingredients according to Regulation (EC) No 1272/2008	

Component	Product identifier	Concentration	Classification
1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate) (Main constituent)	(CAS No.) 159269-48-4	≤ 100%	Self-heat. 2, H252 Acute Tox. 3, H301 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335

Full text of H-statements: see section 16

#### 3.2. Mixture

Not applicable

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General advice

Hydrofluoric (HF) acid burns require immediate and specialized first aid and medical treatment. Symptoms may be delayed up to 24 hours depending on the concentration of HF. After decontamination with water, further damage can occur due to penetration/absorption of the fluoride ion. Treatment should be directed toward binding the fluoride ion as well as the effects of exposure. Skin exposures can be treated with a 2.5% calcium gluconate gel repeated until burning ceases. More serious skin exposures may require subcutaneous calcium gluconate except for digital areas unless the physician is experienced in this technique, due to the potential for tissue injury from increased pressure. Absorption can readily occur through the subungual areas and should be considered when undergoing decontamination. Prevention of absorption of the fluoride ion in cases of ingestion can be obtained by giving milk, chewable calcium carbonate tablets or Milk of Magnesia to conscious victims. Conditions such as hypocalcemia, hypomagnesemia and cardiac arrhythmias should be monitored for, since they can occur after exposure. Consult a physician. Show this safety data sheet to the doctor in attendance.

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##### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

##### In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. First treatment with calcium gluconate paste.

##### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

##### If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

#### 4.2. Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

# 1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate)

## Safety Data Sheet

According to Regulation (EC) No. 1907/2006

### 5.2. Special hazards arising from the substance or mixture

No data available.

### 5.3. Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4. Further information

Use water spray to cool unopened containers.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

### 6.3. Methods and material for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

### 6.4. Reference to other sections

For disposal see section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Keep away from sources of ignition- No smoking.

For precautions see section 2.2.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2-8 °C.

Handle and store under inert gas. Heat sensitive.

### 7.3. Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2. Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product.

#### Personal protective equipment

##### Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

# 1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate)

## Safety Data Sheet

According to Regulation (EC) No. 1907/2006

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail [sales@kcl.de](mailto:sales@kcl.de), test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body protection

Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environment exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	: powder
Color	: White
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: 225-231°C
Freezing point	: No data available
Initial boiling point and boiling range	: No data available
Flash point	: No data available
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: 11.04 –(Air =1.0)
Relative vapor density at 20 °C	: No data available
Molecular Weight	: 319.82 g/mol
Solubility	: Water insoluble
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

### 9.2. Other safety information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

The product is stable at normal handling and recommended storage conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

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## Safety Data Sheet

According to Regulation (EC) No. 1907/2006

### 10.4. Conditions to avoid

Heat

### 10.5. Incompatible materials

Reducing agents.

### 10.6. Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides(NOx), Hydrogen fluoride, Borane/boron oxides.

Other decomposition products – No data available.

In the event of fire: see section 5.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity	No data available LD50 Dermal-Rat-> 2,000 mg/kg
Skin corrosion/irritation	No data available
Serious eye damage/irritation	Severe eye irritation
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
Reproductive toxicity	No data available
Specific target organ toxicity(single exposure)	No data available
Specific target organ toxicity (repeated exposure)	No data available
Aspiration hazard	No data available
Additional information	RTECS: Not available Fluoride ion can reduce serum calcium levels possibly causing fatal hypocalcemia. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

## SECTION 12: Ecological information

### 12.1. Toxicity

No additional information available

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

### 12.6. Other adverse effects

No additional information available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

#### Contaminated packaging

Dispose of as unused product.

# 1-fluoro-4-methyl-1,4-diazoniabicyclo[2.2.2]octane bis(tetrafluoroborate)

## Safety Data Sheet

According to Regulation (EC) No. 1907/2006

### SECTION 14: Transport information

#### 14.1. UN number

ADR/RID: 3088

IMDG: 3088

IATA: 3088

#### 14.2. UN proper shipping name

ADR/RID: SELF-HEATING SOLID, ORGANIC, N.O.S. (N-Fluoro-N'-methyl-triethylenediamine bis(tetrafluoroborate))

IMDG: SELF-HEATING SOLID, ORGANIC, N.O.S. (N-Fluoro-N'-methyl-triethylenediamine bis(tetrafluoroborate))

IATA: Self-heating solid, organic, n.o.s. (N-Fluoro-N'-methyl-triethylenediamine bis(tetrafluoroborate))

#### 14.3. Transport hazard class (es)

ADR/RID: 4.2

IMDG: 4.2

IATA: 4.2

#### 14.4. Packaging group

ADR/RID: II

IMDG: II

IATA: II

#### 14.5. Environmental hazards

ADR/RID: no

IMDG: Marine pollutant: no

IATA: no

#### 14.6. Special precautions for user

No data available

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors:

Neither banned nor restricted

Restrictions on the marketing and use of certain dangerous substances and preparations:

Neither banned nor restricted

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals:

Neither banned nor restricted

REACH-Candidate list of Substances of Very High Concern for Authorisation(Article 59) :

This product does not contain substances of very High concern(Regulation(EC) No 1907/2006(REACH), Article 57).

#### 15.2. Chemical safety assessment

For this product, a chemical safety assessment was not carried out.

### SECTION 16: Other information

#### 16.1. Full text of H-statements referred to under sections 2 and 3.

H252	Self-heating in large quantities; may catch fire.
H301	Toxic if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

#### 16.2. Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It, therefore, does not represent any guarantee of the properties of the product. Kumidas shall not be held liable or any damage resulting from handling or from contact with the above product.