



## SAFETY DATA SHEET

### HFE 71DE

#### 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY

PRODUCT NAME: HFE 71DE

PART No.: 1176

SUPPLIER: SAMUEL BANNER & Co Ltd ,  
HAMPTON COURT  
TUDOR ROAD, MANOR PARK  
RUNCORN WA7 1TU

TEL: 01928-597000

FAX: 01928-597001

EMERGENCY TELEPHONE(S): 0207 405 5375 (24 HOUR)

#### 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS No.	CONTENTS	HEALTH (class)	RISK (R No.)
METHYL NONAFLUOROBUTYLETHER	163702-07-6	15-26 %	-	53
METHYL NONAFLUOROISOBUTYLETHER	163702-08-7	25-36 %		53
1,2-TRANS-DICHLOROETHYLENE	156-60-5	49-51 %	Xn	20, 52/53

#### 3 HAZARDS IDENTIFICATION

Irritating to eyes and skin

#### 4 FIRST AID MEASURES

**GENERAL:** This product is not expected to be irritating to the eyes skin or respiratory system at room temperature conditions This assessment does not account for contaminants from product use

**INHALATION:** Provide rest, warmth and fresh air If respiratory problems, artificial respiration/oxygen Get medical help. Get medical attention if any discomfort continues

**INGESTION:** Give water to drink Do not induce vomiting because of the danger of aspiration Get medical attention immediately! Do not give victim anything to drink if he is unconscious.

**SKIN:** Remove affected person from source of contamination Wash the skin immediately with soap and water. Get medical attention if any discomfort continues Remove affected person from source of contamination Wash the skin immediately with soap and water

**EYES:** Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention

#### 5 FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA:** This material is not flammable Use extinguishing media appropriate for surrounding fire

**SPECIAL FIRE FIGHTING PROCEDURES:** Use supplied air respirator if substance is involved in a fire Use water to keep fire exposed containers cool and disperse vapours. Keep run-off water out of sewers and water sources Dike for water control Protective clothing should include helmet, self contained positive

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pressure or pressure demand breathing apparatus, tunic and trousers (leggings), bands around arms; waist and legs. face mask and protective covering for exposed areas of the head.

## UNUSUAL FIRE & EXPLOSION HAZARDS:

This product may give rise to hazardous fumes in a fire. Fire or high temperatures may cause decomposition.

## HAZARDOUS DECOMPOSITION PRODUCTS:

Hydrogen fluoride (HF). Fluorides. perfluorinated acid;

## PROTECTIVE MEASURES IN FIRE:

Wear suitable respiratory protection when dealing with a fire. Wear suitable protective clothing.

## 6 ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS DURING SPILL:

Ensure good ventilation. Avoid breathing vapour. Wear suitable protective clothing.

### PRECAUTIONS TO PROTECT ENVIRONMENT:

Do not let the product or washing down water enter natural water courses or the sewers.

### SPILL CLEANUP METHODS:

Provide ventilation and confine spill. Do not allow runoff to sewer. Clean-up personnel should use respiratory and/or liquid contact protection. Wash thoroughly after dealing with a spillage. Absorb in vermiculite, dry sand or earth and place into containers. Do not contaminate water sources or sewer. If it has entered drains, inform authorities (Fire Service). Exposure to excessive vapour concentrations in confined spaces may cause significant injury.

## 7 HANDLING AND STORAGE

### USAGE PRECAUTIONS:

No specific usage precautions noted. Do not use in confined spaces without adequate ventilation and/or respirator. Container must be kept tightly closed. Where prolonged or repeated exposure is likely PROTECTIVE CLOTHING should be worn including IMPERVIOUS GLOVES and EYE PROTECTION. Ensure good ventilation. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing. Keep in tightly closed, clearly labelled containers. Do not expose the material to temperatures above 41 Degrees C, avoid welding and open flames nearby. Avoid equipment with a heating area of 20+ watts per square inch which can lead to product decomposition. Applications exceeding the above parameters should be reviewed with the appropriate persons with technical expertise.

### USAGE DESCRIPTION:

No smoking whilst using this product as it can result in contamination of the tobacco and/or smoke and lead to the formation of the hazardous decomposition products mentioned in Section 5 & 10 of this HSDS.

### STORAGE PRECAUTIONS:

No special storage precautions noted.

### STORAGE CRITERIA:

Unspecified storage.

## 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

INGREDIENT NAME	CAS No	STD	LT EXP (8 hrs)	ST EXP (15 min)
METHYL NONAFLUOROBUTYLETHER	163702-07-6	PEL	700 ppm	
METHYL NONAFLUOROISOBUTYLETHER	163702-08-7	PEL	700 ppm	
1,2-TRANS-DICHLOROETHYLENE	156-60-5	OEL	700 ppm	

### INGREDIENT COMMENTS:

Volatile Organic Compounds :685 gms/litre

### PROTECTIVE EQUIPMENT:



### PROCESS CONTROL MEASURES:

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station. Wash all splashes from the skin immediately.

### VENTILATION:

Provide adequate general and local exhaust ventilation. All handling to take place in well ventilated area.

### RESPIRATORS:

Seek advice from supervision on the company respiratory protection standard. Respiratory protection must be used if air concentration exceeds acceptable level. Wear respiratory protection with combination filter (dust and gas filter).

### PROTECTIVE GLOVES:

Protective gloves should be used if there is a risk of direct contact or splash. Polyvinyl alcohol (PVA). Polyethylene.

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<b>EYE PROTECTION:</b>	Wear splash-proof eye goggles to prevent any possibility of eye contact.
<b>OTHER PROTECTION:</b>	Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash station. When using do not eat, drink or smoke. Use local exhaust ventilation, or other engineering control to maintain airborne levels below recommended exposure limits. Wear rubber apron.
<b>HYGIENIC WORK ROUTINES:</b>	Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes wet or contaminated. Promptly remove any clothing that becomes contaminated. <b>DO NOT SMOKE IN WORK AREA!</b>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE:</b>	Liquid	<b>COLOUR:</b>	Colourless
<b>ODOUR/TASTE:</b>	Mild (or faint)		
<b>SOLUBILITY DESCRIPTION:</b>	Slightly soluble in water		
<b>SOLUBILITY VALUE (g/100g H<sub>2</sub>O/20°C):</b>	<12ppm	<b>BOILING POINT (°C):</b>	~41
<b>SPECIFIC GRAVITY (Water=1):</b>	~1.37 @ 25 °C	<b>VAPOUR DENSITY (air=1):</b>	8.6
<b>VAPOUR PRESSURE:</b>	~383mmHg @ 25 °C	<b>EVAPORATION RATE:</b>	N/D
<b>pH-VALUE, CONC:</b>	N/A	<b>VISCOSITY:</b>	<0.45 cps
<b>FLASH POINT (°C):</b>	N/A		
<b>AUTO IGNITION TEMPERATURE (°C):</b>	410	<b>FLAMMABILITY LIMIT (lower %):</b>	N/A

## 10. STABILITY AND REACTIVITY

<b>STABILITY:</b>	Avoid: Contact with acids, oxidisers, bases. Decomposes on heating. Avoid temperatures above the boiling point.
<b>CONDITIONS TO AVOID:</b>	Avoid contact with strong oxidisers. Avoid excessive heat for prolonged periods of time. Avoid contact with acids, strong bases. As a general precaution avoid exposure to temperatures above the boiling point (41°C).
<b>MATERIALS TO AVOID:</b>	Strong oxidizing agents, strong acids, acids and bases.
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	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. Hydrogen fluoride has an ACGIH TLV of 3ppm in air of fluoride as a ceiling limit; an OSHA PEL of 3ppm of fluoride as an 8hr TWA and 6ppm of fluoride as a STEL. Perfluoroisobutylene has an ACGIH TLV of 0.01 ppm or 0.082 mg/m <sup>3</sup> .

## 11. TOXICOLOGICAL INFORMATION

<b>TOXICOLOGICAL DATA:</b>	>5000
<b>TOXIC DOSE1- LD50:</b>	>5000mg/kg (oral rat)
<b>TOXIC CONC.- LC50:</b>	>100,000ppm/4h (inh-rat)
<b>TOXICOLOGICAL INFORMATION:</b>	No signs of cardiac sensitisation at exposures up to 100,000 ppm. PRIMARY DERMAL IRRITATION: Minimally Irritating PRIMARY OCCULAR IRRITATION: Practically Non-Irritating DERMAL SENSITISATION: Non Sensitising. MUTAGENICITY: Not a mutagen in reverse mutation or chromosomal aberration assays DEVELOPMENT TOXICITY: No abnormal effects observed. Practically Non-Toxic
<b>INHALATION:</b>	High concentrations of vapours may irritate respiratory system and lead to headache, fatigue, nausea and vomiting. Central nervous system depression. Persistent sneezing. Headache. Drowsiness, dizziness, disorientation, vertigo. Animal studies revealed increased levels of urinary fluoride after repeated exposure.
<b>INGESTION:</b>	Ingestion of this product is not a likely event. Central nervous system depression. Headache. Drowsiness, dizziness, disorientation, vertigo. Narcotic effect. Severe headaches. Severe abdominal pain.
<b>SKIN:</b>	Liquid may irritate skin.
<b>EYES:</b>	May cause discomfort and mild irritation. Irritation, burning, lacrimation, blurred vision after liquid splash. Visual disturbances, incl. blurred vision.
<b>MEDICAL SYMPTOMS:</b>	Irritation of eyes and mucous membranes. Irritation, burning, lacrimation, blurred vision after liquid splash. Sore throat. Skin irritation. Nausea, vomiting. Central nervous system depression. Drowsiness, dizziness, disorientation, vertigo.

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## 12 ECOLOGICAL INFORMATION

LC50 96 HRS FISH (mg/Kg):	N/D
EC50 48 HRS DAPHNIA (mg/l):	N/D
BIO ACCUMULATION:	This product is expected to persist for long periods in the aquatic environment.
DEGRADABILITY:	Not readily biodegradable
ACUTE FISH TOXICITY:	No acute or chronic toxicity to aquatic organisms is expected at the maximum solubility of this product

## 13 DISPOSAL CONSIDERATIONS

GENERAL/CLEANING:	Contaminated packages must be completely emptied before sending away for laundering and re-use.
DISPOSAL METHODS:	Recover and reclaim or recycle if practical. Do not allow runoff to sewer waterway or ground. Confirm disposal procedures with environmental engineer and local regulations. Dispose of in accordance with Local Authority requirements.
WASTE CLASS:	Special Waste

## 14 TRANSPORT INFORMATION

LABEL FOR CONVEYANCE:	No transport warning sign required
ROAD:	
UN No:	N/A
HAZARD CLASS (ADR):	Not classified for transportation
RAIL:	
SEA:	
UN SEA:	N/A
AIR:	
UN AIR:	N/A

## 15 REGULATORY INFORMATION

RISK PHRASES:	R-36/38	Irritating to eyes and skin
SAFETY PHRASES:	S-24/25	Avoid contact with skin and eyes
	S-26	In case of contact with eyes rinse immediately with plenty of water and seek medical advice.
	S-28	After contact with skin, wash immediately with water and soap

## 16 OTHER INFORMATION

USER NOTES:	Since emptied containers retain product residue follow label warnings even after container is emptied. Labels should not be removed from containers until they have been cleaned and no product remains within. For further Health and Safety information contact: Health and Safety Officer
REVISION COMMENTS:	All sections This Health & Safety Data Sheet has been extensively amended. Please check details carefully
REVISION DATE:	25/05/01
REVISION No. /REPLACES SDS ISSUED:	2-04/04/97
SAFETY DATA SHEET STATUS:	Approved
DATE:	25/05/01
SIGNATURE:	D Dalton

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