



# MATERIAL SAFETY DATA SHEET

## Fyram

### IDENTIFICATION OF THE SUPPLIER:

**AGRO CHEMICALS INDUSTRIES LTD**

**JORDAN - AMMAN**

**P.O.Box 183020 Amman 11118 Jordan**

**Fax. +962 6 5548220**

**Tel. +962 6 5548224/5**

**E-mail [info@aci.com.jo](mailto:info@aci.com.jo).**

### IDENTIFICATION OF THE PRODUCT:

<b>Trade name:</b>	Fyram
<b>Uses:</b>	Fungicide
<b>Type of formulation:</b>	Suspension concentrate (SC)
<b>Common name:</b>	Fluopyram
<b>Chemical name:</b>	Fluopyram (BSI, E-ISO, (m) F-ISO)
<b>Empirical formula:</b>	$C_{16}H_{11}ClF_6N_2O$

### HAZARDS IDENTIFICATION:

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

**Classification in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Chronic aquatic toxicity: Category 2

H411 Toxic to aquatic life with long lasting effects.

#### 2. Label elements

**Labelling in accordance with Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures, as amended.**

Hazard label for supply/use required.

## Hazardous components which must be listed on the label:



### Hazard statements

- H411 Toxic to aquatic life with long lasting effects.  
 EUH208 Contains 1,2-benzisothiazolin-3-one, reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one (3:1). May produce an allergic reaction.  
 EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

### Precautionary statements

- P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P501 Dispose of contents/container in accordance with local regulation.

### 3. Other hazards

No other hazards known.

## COMPOSITION OF PRODUCT:

Each 1 L contains the following:

Contents	CAS#	Amount in g/l
Fluopyram (a.i)	658066-35-4	500
Inert materials	---	Up to 1 L

## FIRST AID MEASURES:

### 1. Description of first aid measures

Inhalation	Move to fresh air. Keep patient warm and at rest. Call a physician or poison control center immediately.
Skin contact	Wash off thoroughly with plenty of soap and water, if available with polyethyleneglycol 400, subsequently rinse with water. Get medical attention if irritation develops and persists.

Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation develops and persists.
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. Rinse mouth.

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

Symptoms	To date no symptoms are known.
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## 3. Indication of any immediate medical attention and special treatment needed

Treatment	There is no specific antidote. Treat symptomatically.
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## **FIREFIGHTING MEASURES:**

### 1. Extinguishing media

Suitable	Water spray, Carbon dioxide (CO <sub>2</sub> ), Foam, Sand
Unsuitable	High volume water jet

### 3. Advice for firefighters

Special protective equipment for firefighters	In the event of fire and/or explosion do not breathe fumes. Wear self-contained breathing apparatus and protective suit.
Further information	Contain the spread of the fire-fighting media. Do not allow run-off from fire fighting to enter drains or water courses.

## **ACCIDENTAL RELEASE MEASURES:**

1. Personal precautions, protective equipment and emergency procedures	
Precautions.	Avoid contact with spilled product or contaminated surfaces. Use personal protective equipment
2. Environmental precautions	Do not allow to get into surface water, drains and ground water.
3. Methods and materials for containment and cleaning up	
Methods for cleaning up	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Clean contaminated floors and objects thoroughly, observing environmental regulations. Collect and transfer

	the product into a properly labelled and tightly closed container
4. Reference to other sections	Information regarding safe handling, see section “HANDLING AND STORAGE”. Information regarding personal protective equipment, see section “EXPOSURE CONTROLS/PERSONAL PROTECTION”. Information regarding waste disposal, see section “DISPOSAL CONSIDERATIONS”.

## HANDLING AND STORAGE:

1. Precautions for safe handling	
Advice on safe handling	Use only in area provided with appropriate exhaust ventilation.
Advice on protection against fire and explosion	No special precautions required.
Hygiene measures	Avoid contact with skin, eyes and clothing. Keep working clothes separately. Wash hands before breaks and immediately after handling the product. Remove soiled clothing immediately and clean thoroughly before using again. Garments that cannot be cleaned must be destroyed (burnt).
2. Conditions for safe storage, including any incompatibilities	
Requirements for storage areas and containers	Keep containers tightly closed in a dry, cool and well-ventilated place. Store in original container. Store in a place accessible by authorized persons only. Keep away from direct sunlight. Protect from frost.
Advice on common storage	Keep away from food, drink and animal feedingstuffs.
Suitable materials	HDPE (high density polyethylene)
3. Specific end use(s)	Refer to the label and/or leaflet.

## EXPOSURE CONTROLS/PERSONAL PROTECTION:

### 1. Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Fluopyram	658066-35-4	0,34 mg/m <sup>3</sup> (TWA)		OES BCS*

\*OES BCS: Internal Bayer AG, Crop Science Division "Occupational Exposure Standard"

## 2. Exposure controls

<b>Respiratory protection</b>	Respiratory protection is not required under anticipated circumstances of exposure. Respiratory protection should only be used to control residual risk of short duration activities, when all reasonably practicable steps have been taken to reduce exposure at source e.g. containment and/or local extract ventilation. Always follow respirator manufacturer's instructions regarding wearing and maintenance.	
<b>Hand protection</b>	Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Wash gloves when contaminated. Dispose of when contaminated inside, when perforated or when contamination on the outside cannot be removed. Wash hands frequently and always before eating, drinking, smoking or using the toilet.	
	Material Rate of permeability Glove thickness Protective index Directive	Nitrile rubber > 480 min > 0.4 mm Class 6 Protective gloves complying with EN 374.
<b>Eye protection</b>	Wear goggles (conforming to EN166, Field of Use = 5 or equivalent).	
<b>Skin and body protection</b>	Wear standard coveralls and Category 3 Type 6 suit. If there is a risk of significant exposure, consider a higher protective type suit. Wear two layers of clothing wherever possible. Polyester/cotton or cotton overalls should be worn under chemical protection suit and should be professionally laundered frequently.	

## PHYSICAL AND CHEMICAL PROPERTIES:

1. Information on basic physical and chemical properties	
Form	Suspension
Colour	White to beige
Odour	Characteristic
pH	5,5 - 8,0 (100 %) (23 °C)
Flash point	> 85 °C No flash point up to decomposition.
Ignition temperature	430 °C
Auto-ignition temperature	430 °C

Density	ca. 1,16 g/cm <sup>3</sup> ( 20 °C)
Partition coefficient: n-octanol/water	No data available
Partition coefficient: n-octanol/water	Fluopyram: log Pow: 3,3
Impact sensitivity	Not impact sensitive.
Oxidizing properties	No oxidizing properties
Explosivity	Not explosive 92/69/EEC, A.14 / OECD 113
2. Other information	Further safety related physical-chemical data are not known.

## STABILITY AND REACTIVITY:

1. Reactivity	
Thermal decomposition	Stable under normal conditions.
2. Chemical stability	Stable under recommended storage conditions.
3. Possibility of hazardous reactions	No hazardous reactions when stored and handled according to prescribed instructions.
4. Conditions to avoid	Extremes of temperature and direct sunlight.
5. Incompatible materials	Store only in the original container.
Hazardous decomposition products	No decomposition products expected under normal conditions of use.

## TOXICOLOGICAL INFORMATION:

<b>1. Information on toxicological effects</b>	
<b>Acute oral toxicity</b>	LD <sub>50</sub> (Rat) > 2.000 mg/kg
<b>Acute inhalation toxicity</b>	LC <sub>50</sub> (Rat) > 3,34 mg/l Exposure time: 4 h Highest attainable concentration. No deaths Determined in the form of a respirable aerosol.
<b>Acute dermal toxicity</b>	LD <sub>50</sub> (Rat) > 2.000 mg/kg
<b>Skin corrosion/irritation</b>	No skin irritation (Rabbit)
<b>Serious eye damage/eye irritation</b>	No eye irritation (Rabbit)
<b>Respiratory or skin sensitisation</b>	Skin: Non-sensitizing. (Mouse) OECD Test Guideline 429, local lymph node assay (LLNA)
<b>Assessment STOT Specific target organ toxicity – single exposure</b>	
Fluopyram: Based on available data, the classification criteria are not met.	



<b>Assessment STOT Specific target organ toxicity – repeated exposure</b>
Fluopyram did not cause specific target organ toxicity in experimental animal studies.
<b>Assessment mutagenicity</b>
Fluopyram was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
<b>Assessment carcinogenicity</b>
Fluopyram caused at high dose levels an increased incidence of tumours in rats in the following organ(s): Liver. Fluopyram caused at high dose levels an increased incidence of tumours in mice in the following organ(s): Thyroid. The tumours seen with Fluopyram were caused through a non-genotoxic mechanism, which is not relevant at low doses. The mechanism that triggers these tumours is not relevant to humans.
<b>Assessment toxicity to reproduction</b>
Fluopyram caused reproduction toxicity in a two-generation study in rats only at dose levels also toxic to the parent animals. The reproduction toxicity seen with Fluopyram is related to parental toxicity.
<b>Assessment developmental toxicity</b>
Fluopyram caused developmental toxicity only at dose levels toxic to the dams. The developmental effects seen with Fluopyram are related to maternal toxicity.
<b>Aspiration hazard</b>
Based on available data, the classification criteria are not met.
<b>Further information</b>
No further toxicological information is available.

## ECOLOGICAL INFORMATION:

<b>1. Toxicity</b>	
<b>Toxicity to fish</b>	LC <sub>50</sub> (Oncorhynchus mykiss (rainbow trout)) > 284 mg/l Exposure time: 96 h Tested up to its maximum solubility.
<b>Toxicity to aquatic invertebrates</b>	EC <sub>50</sub> (Daphnia magna (Water flea)) > 77,7 mg/l Exposure time: 48 h Tested up to its maximum solubility.
<b>Toxicity to aquatic plants</b>	EC <sub>50</sub> (Raphidocelis subcapitata (freshwater green alga)) 22,9 mg/l Growth rate; Exposure time: 72 h ErC <sub>50</sub> (Lemna gibba (gibbous duckweed)) 13,4 mg/l Growth rate; Exposure time: 7 d NOEC (Lemna gibba (gibbous duckweed)) 0,294 mg/l Growth rate; Exposure time: 7 d
<b>2. Persistence and degradability</b>	
<b>Biodegradability</b>	Fluopyram:



	Not rapidly biodegradable
<b>K<sub>oc</sub></b>	Fluopyram: K <sub>oc</sub> : 279
<b>3. Bioaccumulative potential</b>	
<b>Bioaccumulation</b>	Fluopyram: Bioconcentration factor (BCF) 18 Does not bioaccumulate.
<b>4. Mobility in soil</b>	
<b>Mobility in soil</b>	Fluopyram: Moderately mobile in soils
<b>5. Results of PBT and vPvB assessment</b>	
<b>PBT and vPvB assessment</b>	Fluopyram: This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).
<b>6. Other adverse effects</b>	
<b>Additional ecological information</b>	No other effects to be mentioned.

## DISPOSAL CONSIDERATIONS:

<b>1. Waste treatment methods</b>	
<b>Product</b>	In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.
<b>Contaminated packaging</b>	Not completely emptied packagings should be disposed of as hazardous waste.

## TRANSPORT INFORMATION:

<b>SANS 10231</b>	
1. UN number	3082
2. Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUOPYRAM SOLUTION)
3. Transport hazard class(es)	9
4. Packaging Group	III
5. Environm. Hazardous Mark	YES
<b>IMDG</b>	
1. UN number	3082
2. Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.





	(FLUOPYRAM SOLUTION)
3. Transport hazard class(es)	9
4. Packaging Group	III
5. Marine pollutant	YES
<b>IATA</b>	
1. UN number	3082
2. Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (FLUOPYRAM SOLUTION)
3. Transport hazard class(es)	9
4. Packaging Group	III
5. Environm. Hazardous Mark	YES
<b>6. Special precautions for user</b>	
See sections "ACCIDENTAL RELEASE MEASURES" to "EXPOSURE CONTROLS/PERSONAL PROTECTION" of this Safety Data Sheet.	
<b>7. Transport in bulk according to Annex II of MARPOL and the IBC Code</b>	
No transport in bulk according to the IBC Code.	