FLUPRO®

VersionRevision Date:MSDS Number:Country: US1.1010/08/2015400000001031Language: EN

SECTION 1. IDENTIFICATION

Product name : FLUPRO®

Product code : 40000001031

Manufacturer or supplier's details

Company: MacDermid Agricultural Solutions, Inc

245 Freight St Waterbury, CT

United States of America

06702

Telephone: +1 800 423 8569

Prepared by sds.request@arysta.com

Further information for the safety data sheet :

sds.request@arysta.com

1.4 Emergency telephone number

Emergency telephone number: Agriphar Crop Solutions: +1 800 423 8569(24 hours) 800-424-9300

For additional emergency telephone numbers see section 16 of the

Safety Data Sheet.

Recommended use of the chemical and restrictions on use

Recommended use : Plant growth regulator

Restrictions on use : Agriculture, For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Eye irritation : Category 2A

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

Skin sensitisation : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity

- single exposure

: Category 3 (Respiratory system)

Aspiration hazard : Category 1

Acute aquatic toxicity : Category 2

Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms







Signal word : Danger

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled

H304 May be fatal if swallowed and enters airways.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H351 Suspected of causing cancer.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product. P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protection/

face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER or doctor/ physician.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or

doctor/ physician if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

P331 Do NOT induce vomiting.

P333 + P313 If skin irritation or rash occurs: Get medical advice/

attention.

P337 + P313 If eye irritation persists: Get medical advice/ atten-

tion.

P362 Take off contaminated clothing and wash before reuse.

P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container

tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste dis-

posal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Mixture

Hazardous components

Chemical Name	CAS-No.	Concentration (% w/w)
Solvent naphtha (petroleum), heavy arom.	64742-94-5	>= 70 - < 90
2-methylnaphthalene	91-57-6	>= 30 - < 50
1-methylnaphthalene	90-12-0	>= 10 -< 20
2-Chloro-N-[2,6-dinitro-4-	62924-70-3	>= 10 -< 20
(trifluoromethyl)phenyl]-N-ethyl-6-fluorobenzene		
methanamine		
propane-1,2-diol	57-55-6	>= 1 - < 5
naphthalene	91-20-3	>= 0.1 -< 1

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.

If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible.

Call a POISON CENTER or doctor/ physician.

In case of skin contact : Remove contaminated clothing and shoes.

Wash off immediately with plenty of water for at least 15

minutes.

Call a POISON CENTER or doctor/ physician.

In case of eye contact : Hold eyelids apart and flush eyes with plenty of water for at

least 15 minutes. Get medical attention.

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

Remove contact lenses, if present, after the first 5 minutes, then

continue rinsing eye.

Call a POISON CENTER or doctor/ physician.

If swallowed : Call a physician or poison control centre immediately.

Have person sip a glass of water if able to swallow.

DO NOT induce vomiting unless directed to do so by a physician or

poison control center.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

: irritant effects Allergic reactions

> Symptoms may be delayed. Harmful if swallowed or if inhaled

May be fatal if swallowed and enters airways.

Causes skin irritation.

May cause an allergic skin reaction. Causes serious eye irritation. May cause respiratory irritation. Suspected of causing cancer.

Notes to physician : The first aid procedure should be established in consultation

with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Extinguishing media - large fires

Alcohol-resistant foam

(on small fires)

Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing media : Water spray jet

Further information : Do not discharge extinguishing waters into streams, rivers and lakes.

Special protective equipment for

firefighters

: Body covering protective clothing, full "turn-out" gear.

Self-contained breathing apparatus (EN 133)

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency pro-

cedures

: Wear suitable protective equipment. Avoid contact with skin and eyes.

Environmental precautions : Prevent leaks and prevent soil / water pollution caused by leaks.

Methods and materials for containment and cleaning up

: Absorb on inert material such as sand, earth, vermiculite.

Collect for disposal.

Dam up.

Large spills should be collected mechanically (remove by pumping)

for disposal.

FLUPRO®

VersionRevision Date:MSDS Number:Country: US1.1010/08/2015400000001031Language: EN

Pump excess material into suitable container (metal drums, metal

tank, or such).

In accordance with local and national regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not get in eyes.

Avoid prolonged or repeated contact with skin.

Avoid inhalation of vapour or mist. Use with adequate ventilation. Wash thoroughly after handling. Wash thoroughly after handling.

Conditions for safe storage : Keep container closed.

Keep in a dry, cool place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type	Control parameters	Basis
		(Form of ex-	/ Permissible con-	
		posure)	centration	
Solvent naphtha (petroleum),	64742-94-5	TWA	500 ppm	OSHA Z-1
heavy arom.			2,000 mg/m3	
		TWA	200 mg/m3	ACGIH
			(total hydrocarbon	
			vapor)	
		TWA	400 ppm	OSHA P0
			1,600 mg/m3	
2-methylnaphthalene	91-57-6	TWA	0.5 ppm	ACGIH
propane-1,2-diol	57-55-6	TWA	10 mg/m3	US WEEL
naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm	OSHA Z-1
			50 mg/m3	
		TWA	10 ppm	OSHA P0
			50 mg/m3	
		STEL	15 ppm	OSHA P0
			75 mg/m3	
		TWA	10 ppm	NIOSH REL
			50 mg/m3	
		ST	15 ppm	NIOSH REL
			75 mg/m3	

Hazardous components without workplace control parameters

Components	CAS-No.
1-methylnaphthalene	90-12-0
2-Chloro-N-[2,6-dinitro-4-	62924-70-3
(trifluoromethyl)phenyl]-N-	
ethyl-6-fluorobenzene meth-	

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 40000001031 Language: EN

anamine

Personal protective equipment

Respiratory protection : Self-contained breathing apparatus (EN 133)

When workers are facing concentrations above the exposure

limit they must use appropriate certified respirators.

Hand protection

Remarks : Impervious gloves

Eye protection : Safety glasses with side-shields

Skin and body protection : Long sleeved clothing

Hygiene measures : Provide adequate ventilation.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : yellow

Odour : aromatic

Odour Threshold : No data available

pH : No data available

Melting point/range : Not applicable

Boiling point/boiling range : No data available

Flash point : 99 °C

Method: Setaflash

Evaporation rate : No data available

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : 1.06

Relative density : 1.06

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

Partition coefficient: n-

octanol/water

: No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Self-Accelerating decomposition

temperature (SADT)

: Method: No information available.

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition prod-

ucts

: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Eye contact Skin contact Ingestion

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat): 1,841 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.92 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Components:

propane-1,2-diol:

Acute oral toxicity : LD50 (Rat): 20,000 mg/kg

LD50 (Rabbit): 18,500 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 20,800 mg/kg

FLUPRO®

VersionRevision Date:MSDS Number:Country: US1.1010/08/2015400000001031Language: EN

Skin corrosion/irritation

Product:

Species: Rabbit

Result: Moderate skin irritation

Serious eye damage/eye irritation

Product:

Species: Rabbit

Result: Moderate eye irritation

Respiratory or skin sensitisation

Product:

Species: Guinea pig Result: positive

Carcinogenicity

IARC Group 2B: Possibly carcinogenic to humans

naphthalene 91-20-3

Group 2B: Possibly carcinogenic to humans

OSHA No component of this product present at levels greater than or

equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcino-

gen by OSHA.

NTP Reasonably anticipated to be a human carcinogen

naphthalene 91-20-3

Reasonably anticipated to be a human carcinogen

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

Components:

naphthalene:

FLUPRO®

VersionRevision Date:MSDS Number:Country: US1.1010/08/2015400000001031Language: EN

Partition coefficient: n-

octanol/water

: log Pow: 3.4

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Pro-

tection of Stratospheric Ozone - CAA Section 602 Class I

Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Sec-

a class I of class II ODS as defined by the U.S. Clean

tion 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological infor-

mation

: No information on ecology is available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulation

UNRTDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(naphthalene)

Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

964

: 964

(naphthalene)

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo

aircraft)

Packing instruction (passen-

iction (passen-

ger aircraft)

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

IMDG-Code

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(naphthalene)

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A

EmS Code : F-A, S-F Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID,

N.O.S.

(naphthalene)

Class : 9 Packing group : III

Labels : CLASS 9
ERG Code : 171
Marine pollutant : no

Remarks : Only regulated by air Into, Out of or Within the United States

in containers 881.8 lbs (400 kg) or greater. Please refer to 49

CFR for any details.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Component RQ (lbs)
naphthalene	91-20-3	100	*

^{*:} Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ	Calculated product RQ
		(lbs)	(lbs)
ethylene oxide	75-21-8	10	*

^{*:} Calculated RQ exceeds reasonably attainable upper limit.

SSARA 311/312 Hazards : Acute Health Hazard

Chronic Health Hazard

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 40000001031 Language: EN

SARA 302 : No chemicals in this material are subject to the reporting require-

ments of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels es-

tablished by SARA Title III, Section 313:

naphthalene 91-20-3 0.6828 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

 2-methylnaphthalene
 91-57-6
 30.3519 %

 1-methylnaphthalene
 90-12-0
 18.9699 %

 propane-1,2-diol
 57-55-6
 1.426 %

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

naphthalene 91-20-3 0.6828 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

naphthalene 91-20-3 0.6828 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

TSCA list

Not relevant

No substances are subject to a Significant New Use Rule.

The following substance(s) is/are subject to TSCA 12(b) export notification requirements: naphthalene 91-20-3

FIFRA Hazard Information:

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

The hazard information required on the pesticide label is reproduced below.

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 40000001031 Language: EN

DANGER

CORROSIVE. Severe eye irritant. Causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Do not get in eyes, on skin or on clothing.

This product is toxic to fish and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Direct contamination of any body of water may kill fish and aquatic organisms. Do not contaminate water for irrigation or domestic purposes by cleaning of equipment or disposal of wastes.

Do not use or store near heat or open flame.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

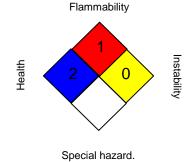
(Q)SAR - (Quantitative) Structure Activity Relationship; ASTM - American Society for the Testing of Materials; bw - Body weight; DIN - Standard of the German Institute for Standardisation; ECx -Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; IARC - International Agency for Research on Cancer; IATA -International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods: IMO - International Maritime Organization: ISO - International Organisation for Standardization; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative; DSL - Domestic Substances List (Canada); KECI - Korea Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); AICS - Australian Inventory of Chemical Substances; IECSC - Inventory of Existing Chemical Substances in China; ENCS - Existing and New Chemical Substances (Japan); ISHL - Industrial Safety and Health Law (Japan); PICCS - Philippines Inventory of Chemicals and Chemical Substances; NZIoC - New Zealand Inventory of Chemicals; TCSI - Taiwan Chemical Substance Inventory; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; DOT - Department of Transportation; EHS - Extremely Hazardous Substance; HMIS - Hazardous Materials Identification System; MSHA - Mine Safety and Health Administration; NFPA - National Fire Protection Association; RCRA - Resource Conservation and Recovery Act; RQ - Reportable Quantity: SARA - Superfund Amendments and Reauthorization Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; GLP - Good Laboratory Practice; ERG - Emergency Response Guide; NTP - National Toxicology Program; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods

FLUPRO®

Version Revision Date: MSDS Number: Country: US 1.10 10/08/2015 400000001031 Language: EN

Further information

NFPA:



HMIS III:



0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, * = Chronic

Revision Date : 10/08/2015

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN

Carechem24 International Worldwide Coverage

Emergency Phone Number

Europe:	All European Countries	+44 (0) 1235 239 670 (NCEC)
Asia Pacific:	East / South East Asia – Regional Number	+65 3158 1074
	Australia	+61 2801 44558
	New Zealand	+64 9929 1483
	China	+86 532 8388 9090
	China Taiwan	+86 10 5100 3039
	Japan	+81 345 789 341
	Indonesia	00780 3011 0293
	Malaysia	+60 3 6207 4347
	Thailand	001800 1 2066 6751
	Korea	+65 3158 1285 +82 (0)234 798 401
	Vietnam	+65 3158 1255
	India	+65 3158 1198 0800 100 7479

FLUPRO®

VersionRevision Date:MSDS Number:Country: US1.1010/08/2015400000001031Language: EN

	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
Middle East / Africa:	Arabic speaking countries	+44 (0) 1235 239 671
	South Africa	+27 21 300 2732
	All other countries	+44 (0) 1235 239 670
<u>America</u>	United States of America and Canada	+1866 928 0789 +1 215 207 0061
Latin America:	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670