

# SAFETY DATA SHEET

## FLUPRO®

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

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### SECTION 1. IDENTIFICATION

Product name : FLUPRO®  
Product code : 400000001031

#### 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.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Acute toxicity (Oral) : Category 4  
Acute toxicity (Inhalation) : Category 4  
Skin irritation : Category 2  
Eye irritation : Category 2A

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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.

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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/ attention.  
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 disposal 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-(trifluoromethyl)phenyl]-N-ethyl-6-fluorobenzene methanamine	62924-70-3	>= 10 - < 20
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.

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- 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.
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### SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Extinguishing media - large fires  
Alcohol-resistant foam  
(on small fires)  
Carbon dioxide (CO<sub>2</sub>)  
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)
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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : 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.
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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 (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.	64742-94-5	TWA	500 ppm 2,000 mg/m <sup>3</sup>	OSHA Z-1
		TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH
		TWA	400 ppm 1,600 mg/m <sup>3</sup>	OSHA P0
2-methylnaphthalene	91-57-6	TWA	0.5 ppm	ACGIH
propane-1,2-diol	57-55-6	TWA	10 mg/m <sup>3</sup>	US WEEL
naphthalene	91-20-3	TWA	10 ppm	ACGIH
		TWA	10 ppm 50 mg/m <sup>3</sup>	OSHA Z-1
		TWA	10 ppm 50 mg/m <sup>3</sup>	OSHA P0
		STEL	15 ppm 75 mg/m <sup>3</sup>	OSHA P0
		TWA	10 ppm 50 mg/m <sup>3</sup>	NIOSH REL
		ST	15 ppm 75 mg/m <sup>3</sup>	NIOSH REL

#### Hazardous components without workplace control parameters

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

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| 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.

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### 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

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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.

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### SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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### 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

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### 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 carcinogen by OSHA.

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

**NTP**

Reasonably anticipated to be a human carcinogen

naphthalene

91-20-3

Reasonably anticipated to be a human carcinogen

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

No data available

### Persistence and degradability

No data available

### Bioaccumulative potential

**Components:**

naphthalene:



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

Additional ecological information : No information on ecology is available.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

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

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## 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. (naphthalene)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964

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### 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, 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 (lbs)	Calculated product RQ (lbs)
ethylene oxide	75-21-8	10	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SSARA 311/312 Hazards** : Acute Health Hazard  
Chronic Health Hazard

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**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

naphthalene	91-20-3	0.6828 %
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### 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 SOCM I 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 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

naphthalene	91-20-3	0.6828 %
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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
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### 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.

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### 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.

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## 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; EC<sub>x</sub> - Concentration associated with x% response; EL<sub>x</sub> - Loading rate associated with x% response; EmS - Emergency Schedule; ErC<sub>x</sub> - 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; IC<sub>50</sub> - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISO - International Organisation for Standardization; LC<sub>50</sub> - Lethal Concentration to 50 % of a test population; LD<sub>50</sub> - 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

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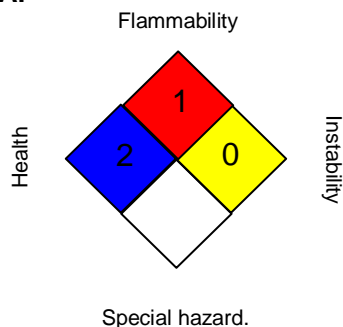
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### Further information

#### NFPA:



#### HMIS III:

HEALTH	2*
FLAMMABILITY	1
PHYSICAL HAZARD	

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

<u>Europe:</u>	All European Countries	+44 (0) 1235 239 670 (NCEC)
<u>Asia Pacific:</u>	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

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	Pakistan	+65 3158 1329
	Philippines	+65 31581203
	Sri Lanka	+65 3158 1195
	Emergency Phone Number	+65 3158 1200
<u>Middle East / Africa:</u>	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
<u>Latin America:</u>	Brazil	+55 113 711 9144
	Mexico	+52 555 004 8763
	Chile	+56 225 829 336
	All other countries	+44 (0) 1235 239 670