

# SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

## 1. Identification

**Product identifier:** INFINAM® FR 4100 L

### Other means of identification

None.

### Recommended restrictions

**Recommended use:** 3D printing

**Restrictions on use:** Not determined.

### Manufacturer/Importer/Distributor Information

Company Name : Evonik Corporation  
2 Turner Place  
Piscataway, NJ 08854  
USA

Telephone : +1 732 981 5000

E-mail : product-regulatory-services@evonik.com

### Emergency telephone number:

24-Hour Health : +1 800 424 9300 (CHEMTREC - US & CANADA)

Emergency : 800 681 9531 (CHEMTREC MEXICO)

+1 703 527 3887 (CHEMTREC WORLD)

## 2. Hazard(s) identification

### Hazard Classification

#### Health Hazards

Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1
Toxic to reproduction	Category 1B
Specific Target Organ Toxicity - Repeated Exposure	Category 2

### Label Elements

#### Hazard Symbol:



#### Signal Word:

Danger

**Hazard Statement:**

Causes serious eye damage.  
 May cause an allergic skin reaction.  
 May damage fertility or the unborn child.  
 May cause damage to organs through prolonged or repeated exposure.

**Precautionary Statements**
**Prevention:**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required.

**Response:**

IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. IF exposed or concerned: Get medical advice/attention.

**Storage:**

Store locked up.

**Disposal:**

Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

**Hazard(s) not otherwise classified (HNOC):** None.

### 3. Composition/information on ingredients

**Mixtures**

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) <sup>*</sup>
4-(1-oxo-2-propenyl)-morpholine		5117-12-4	10 - <25%
7,7,9-(resp. 7,9,9-)trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate		72869-86-4	10 - <20%
Methacrylated Oligomer	Trade Secret	Trade Secret	5 - <10%
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide		75980-60-8	0.3 - <1%
Methacrylate Ester Monomer			0.1 - <1%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Trade secret information:** A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

**Description of necessary first-aid measures**

<b>General information:</b>	Pay attention to self-protection. Move out of dangerous area. Keep warm, position comfortably, and cover well. Do not leave the victim unattended.
<b>Inhalation:</b>	Move to fresh air. Get medical attention immediately.
<b>Skin Contact:</b>	Wash off affected area immediately with plenty of water for at least 15 minutes. Get medical attention immediately.
<b>Eye contact:</b>	Rinse immediately with plenty of water for 15 minutes and seek advice of an eye specialist.
<b>Ingestion:</b>	Do NOT induce vomiting. Seek medical advice.
<b>Personal Protection for First-aid Responders:</b>	No data available.

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms:</b>	corrosive effects sensitising effects Toxic to reproduction
<b>Hazards:</b>	No data available.

**Indication of immediate medical attention and special treatment needed**

<b>Treatment:</b>	Continue with first aid measures. Depending on the pathology and clinical findings, patient monitoring and symptomatic treatment are necessary.
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**5. Fire-fighting measures****Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Water spray, foam, CO<sub>2</sub>, dry powder.

**Unsuitable extinguishing media:** High volume water jet.

**Special hazards arising from the substance or mixture:** May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition. Nitrogen Oxides  
Under certain conditions of combustion traces of other toxic substances cannot be excluded

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** No data available.

**Special protective equipment for fire-fighters:** As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Do not breathe vapours or spray mist.

**Accidental release measures:** No data available.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material e.g. universal binder Fill into marked, sealable containers. Dispose of contaminated material as a waste in a correct manner.

**Environmental Precautions:**

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, rivers, groundwater or soil.

**7. Handling and storage****Handling****Technical measures (e.g. Local and general ventilation):**

If possible, use material transfer/filling, metering and blending plants that are closed.

**Safe handling advice:**

Safety showers and eye showers should be easily accessible. In order to determine further specifications applicable to the personal protection equipment, a hazard assessment according to the OSHA standards (29 CFR 1910.132) for personal protection equipment (PPE) is recommended before the product is used. Provide sufficient ventilation and exhaust at the workplace.

**Contact avoidance measures:**

No data available.

**Storage****Safe storage conditions:**

Keep tightly closed in a dry and cool place. Keep away from direct sunlight. General rules of fire prevention should be observed.

**Safe packaging materials:**

No data available.

**8. Exposure controls/personal protection****Control Parameters****Occupational Exposure Limits**

None of the components have assigned exposure limits.

**Biological Limit Values**

No biological exposure limits noted for the ingredient(s).

**Appropriate Engineering Controls**

If possible, use material transfer/filling, metering and blending plants that are closed.

**Individual protection measures, such as personal protective equipment****Eye/face protection:**

close-fitting protective goggles (e.g. closed goggles) or face protection

**Skin Protection**

<b>Hand Protection:</b>	Material: nitrile rubber (Camatril Velours) Break-through time: > 30 min Additional Information: No protective glove type has been specified for use with this product. The glove listed is only a preliminary recommendation issued by Kächele-Cama Latex GmbH, Am Kreuzacker 9, D-36124 Eichenzell, www.kcl.de, which firm offers such protective gloves. The glove must be changed immediately if any changes in it occur (e.g. swelling, wear). Additional Information: The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.
<b>Skin and Body Protection:</b>	Protective suit Rubber or plastic boots
<b>Respiratory Protection:</b>	In case of dusts/vapours/aerosols being formed or if the limit values like TLV are exceeded: use respiratory equipment with suitable filter or wear a self contained respiratory apparatus
<b>Hygiene measures:</b>	Avoid contact with skin and eyes. Do not breathe in vapours or aerosols. Take off immediately all contaminated clothing. When using do not eat, drink or smoke.

<b>9. Physical and chemical properties</b>
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**Information on basic physical and chemical properties**

<b>Appearance</b>	
<b>Physical state:</b>	liquid
<b>Form:</b>	liquid
<b>Color:</b>	Black
<b>Odor:</b>	Characteristic
<b>Odor Threshold:</b>	Not determined., Not required by safety or application considerations.
<b>Freezing point:</b>	No data available. Not required by safety or application considerations.
<b>Boiling Point:</b>	> 95 °F/> 35 °C
<b>Flammability:</b>	Not applicable
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Explosive limit - upper:</b>	see Explosiveness
<b>Explosive limit - lower:</b>	see Explosiveness
<b>Flash Point:</b>	248 °F/120 °C (ASTM D 92)
<b>Auto-ignition temperature:</b>	The substance or mixture is not classified as pyrophoric. The substance or mixture is not classified as self heating.
<b>Decomposition Temperature:</b>	No data available. Not required by safety or application considerations.
<b>pH:</b>	Not applicable
<b>Viscosity</b>	
<b>Dynamic viscosity:</b>	4,500 mPa.s (77 °F/25 °C)

<b>Kinematic viscosity:</b>	1185 mm <sup>2</sup> /s (104 °F/40 °C)
<b>Flow Time:</b>	No data available.
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	Insoluble in water
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available. Not required by safety or application considerations.
<b>Vapor pressure:</b>	No data available. Not required by safety or application considerations.
<b>Relative density:</b>	No data available. Not required by safety or application considerations.
<b>Density:</b>	1.12 g/cm <sup>3</sup> (ASTM D 4052)
<b>Bulk density:</b>	No data available.
<b>Relative vapor density:</b>	No data available.
<b>Other information</b>	
<b>Explosive properties:</b>	Not explosive
<b>Oxidizing properties:</b>	The substance or mixture is not classified as oxidizing.
<b>Minimum ignition temperature:</b>	No data available. Not required by safety or application considerations.
<b>Formation of Flammable Gases:</b>	Substance or mixture, which in contact with water, does not emit flammable gas
<b>Peroxides:</b>	The substance or mixture is not classified as organic peroxide.
<b>Metal Corrosion:</b>	Not corrosive to metals
<b>Evaporation Rate:</b>	No data available. Not required by safety or application considerations.

## 10. Stability and reactivity

<b>Reactivity:</b>	No data available.
<b>Chemical Stability:</b>	No decomposition if used as directed.
<b>Possibility of hazardous reactions:</b>	Polymerization with heat evolution may occur in the presence of radical forming substances(e.g. peroxides), reducing substances, and/or heavy metal ions.
<b>Conditions to avoid:</b>	Protect against exposure to light, heat, sources of ignition. The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is exceeded, the product may polymerize with heat evolution.
<b>Incompatible Materials:</b>	Peroxides, amines, sulfur compounds, heavy metal ions, alkalis, reducing agents and oxidizing agents. Mineral Acid Free radical initiators
<b>Hazardous Decomposition Products:</b>	None when used as directed.

## 11. Toxicological information

### Information on toxicological effects

#### Information on likely routes of exposure

<b>Inhalation:</b>	Information on effects are given below.
<b>Skin Contact:</b>	Information on effects are given below.
<b>Eye contact:</b>	Information on effects are given below.
<b>Ingestion:</b>	Information on effects are given below.

#### Acute toxicity (list all possible routes of exposure)

##### Oral

**Product:** ATEmix: 2,474.75 mg/kg

##### Dermal

**Product:** ATEmix: 8,417.51 mg/kg

##### Inhalation

**Product:** Not classified for acute toxicity based on available data.

#### Repeated dose toxicity

**Product:** No data available.

##### Components:

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide  
NOAEL (Rat(Female, Male), Oral): 50 mg/kg LOAEL (Rat(Female, Male), Oral): 250 mg/kg

#### Skin Corrosion/Irritation

**Product:** No data available.

##### Components:

4-(1-oxo-2-propenyl)morpholine (Rabbit): Not irritating  
 7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate  
 Methacrylated Oligomer OECD 404 (Rabbit): Not irritating  
 diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Draize (Rabbit): Not irritating  
 Methacrylate Ester Irritating.  
 Monomer

#### Serious Eye Damage/Eye Irritation

**Product:** No data available.

##### Components:

4-(1-oxo-2-propenyl)-morpholine	Not irritating Rabbit:
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate Methacrylated Oligomer	Not irritating OECD 405 Rabbit:
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Risk of serious damage to eyes. OECD 405 Rabbit: Not irritating Draize Rabbit:
Methacrylate Ester Monomer	Irritating.

**Respiratory or Skin Sensitization**

<b>Product:</b>	No data available.
<b>Components:</b>	
4-(1-oxo-2-propenyl)-morpholine	(Albino rabbit)May cause sensitization by skin contact.
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate Methacrylated Oligomer	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Skin sensitizer
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): May cause sensitization by skin contact.
Methacrylate Ester Monomer	Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Skin sensitizer
	May cause sensitization by skin contact.

**Carcinogenicity**

<b>Product:</b>	No data available.
<b>Components:</b>	
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	No evidence that cancer may be caused.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogens present or none present in regulated quantities

**ACGIH: US.ACGIH Threshold Limit Values:**

No carcinogens present or none present in regulated quantities

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogens present or none present in regulated quantities

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:**

No carcinogens present or none present in regulated quantities

**Germ Cell Mutagenicity****In vitro**

<b>Product:</b>	No data available.
<b>Components:</b>	



**Product name: INFINAM® FR 4100 L**

4-(1-oxo-2-propenyl)-morpholine	Bacterial reverse mutation assay (OECD 471): negative
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate	Ames test (OECD 471): negative gene mutation test (HGPRT-Test): negative
Methacrylated Oligomer	gene mutation test (OECD 471): negative

**In vivo**
**Product:** No data available.

**Reproductive toxicity**
**Product:** No data available.

**Components:**

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Presumed human reproductive toxicant

**Specific Target Organ Toxicity - Single Exposure**
**Product:** No data available.

**Specific Target Organ Toxicity - Repeated Exposure**
**Product:** No data available.

**Components:**

4-(1-oxo-2-propenyl)-morpholine Oral: Category 2 May cause damage to organs through prolonged or repeated exposure.

**Aspiration Hazard**
**Product:** No data available.

**Components:**

4-(1-oxo-2-propenyl)-morpholine Not classified

7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxo-5,12-diazahexadecane-1,16-diol-dimethacrylate Not classified

Methacrylated Oligomer Not applicable

diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide Not applicable

Methacrylate Ester Not classified

Monomer Not classified

**Information on health hazards**
**Other hazards**
**Product:** No toxicological tests have been conducted with the product itself.;

**12. Ecological information**
**Ecotoxicity:**
**Acute hazards to the aquatic environment:**
**Fish**
**Product:** No data available.

**Aquatic Invertebrates**

<b>Product:</b>	No data available.
<b>Components:</b>	
4-(1-oxo-2-propenyl)-morpholine	EC 50 (Daphnia magna, 48 h): 120 mg/l
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diol-dimethacrylate	EC 50 (Daphnia magna, 48 h): > 1.2 mg/l No toxicity at the limit of solubility
Methacrylated Oligomer	EC 50 (Daphnia magna, 48 h): 158.3 mg/l
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	EC 50 (Daphnia magna, 48 h): 3.53 mg/l

**Toxicity to Aquatic Plants**

<b>Product:</b>	No data available.
<b>Components:</b>	
4-(1-oxo-2-propenyl)-morpholine	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 120 mg/l (OECD 201)
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diol-dimethacrylate	EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 0.68 mg/l (OECD 201) No toxicity at the limit of solubility
Methacrylated Oligomer	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): 25.7 mg/l (OECD 201)
diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 2.01 mg/l (OECD 201)

**Toxicity to microorganisms**

<b>Product:</b>	No data available.
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**Chronic hazards to the aquatic environment:**
**Fish**

<b>Product:</b>	No data available.
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**Aquatic Invertebrates**

<b>Product:</b>	No data available.
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**Toxicity to Aquatic Plants**

<b>Product:</b>	No data available.
<b>Components:</b>	
7,7,9-(resp. 7,9,9-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diol-dimethacrylate	NOEC (Desmodesmus subspicatus (green algae), 72 h): 0.21 mg/l (OECD 201) No toxicity at the limit of solubility

**Toxicity to microorganisms**

<b>Product:</b>	No data available.
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**Persistence and Degradability**
**Biodegradation**

<b>Product:</b>	No data available.
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**BOD/COD Ratio**

<b>Product:</b>	No data available.
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Product name: INFINAM® FR 4100 L

**Bioaccumulative potential****Bioconcentration Factor (BCF)****Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** Log Kow: No data available. Not required by safety or application considerations.**Mobility in soil:****Product** No data available.**Results of PBT and vPvB assessment:****Product** No data available.**Other adverse effects:****Other hazards****Product:** No further ecotoxicological data are available.**13. Disposal considerations****Disposal methods:** Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method.**Contaminated Packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal.**14. Transport information****Domestic regulation****49 CFR**

Not regulated as a dangerous good

**International Regulations****UNRTDG**

Not regulated as a dangerous good

**IATA-DGR**

Not regulated as a dangerous good

Remarks : Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).

**IMDG-Code**

Not regulated as a dangerous good

Remarks : Not classified as hazardous sea cargo (IMDG code).

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

Not applicable for product as supplied.

**15. Regulatory information****US Federal Regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**Chemical IdentityReportable quantity

Product name: INFINAM® FR 4100 L

2-Propen-1-one, 1-(4-morpholinyl)-      &lt;= 1.0 % One-Time Export Notification only.&lt;= 1.0 % One-Time Export Notification only.

**US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)**
**Chemical Identity**

4-(1-oxo-2-propenyl)-morpholine      Listed.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

None present or none present in regulated quantities.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**
**Hazard categories**

Serious eye damage or eye irritation, Respiratory or Skin Sensitization, Reproductive toxicity, Specific target organ toxicity (single or repeated exposure)

**US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances**

None present or none present in regulated quantities.

**US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting**

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

None present or none present in regulated quantities.

**US State Regulations**
**US. California Proposition 65**

No ingredient requiring a warning under CA Prop 65.

**Inventory Status:**

Australia Industrial Chem. Act (AIIC):	Not in compliance with the inventory.	
Canada DSL Inventory List:	Not in compliance with the inventory.	
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.	
Japan (ENCS) List:	Q (quantity restricted)	
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.	
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.	
Philippines PICCS:	Not in compliance with the inventory.	
Taiwan Chemical Substance Inventory:	Not in compliance with the inventory.	
US TSCA Inventory:	On or in compliance with the inventory	Commercial Status: Active
Switzerland New Subs Notified/Registered:	Not in compliance with the inventory.	
EINECS, ELINCS or NLP:	On or in compliance with the inventory	EU-REACH compliant for

		Evonik Operations GmbH and its affiliates as EU manufacturer/EU importer.
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**16. Other information, including date of preparation or last revision****Issue Date:** 04/26/2023**Version #:** 1.1**Further Information:** No data available.**Revision Information** Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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