SECTION 1. IDENTIFICATION

Product identifier

Product name : N3D-WS11

Other means of identification

Product code : FP21859-P

Synonyms : N3XTDIMENSION® N3D-WS11

Recommended use of the chemical and restrictions on use

Recommended use : 3D printing

Details of the supplier of the safety data sheet

Company name of supplier : Arkema Inc.

Address : 900 First Avenue
King of Prussia, PA 19406

Sartomer
Telephone : (800) 331-7654
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency telephone number

Transportation : CHEMTREC:
(800) 424-9300
(24 hrs., 7 days a week)

Medical: : Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Skin irritation : Category 2

Serious eye damage	:	Category 1
Skin sensitisation	:	Category 1
Germ cell mutagenicity	:	Category 1B
Carcinogenicity	:	Category 1B
Reproductive toxicity	:	Category 1B
Specific target organ toxicity - repeated exposure	:	Category 1 (Peripheral nervous system)
Specific target organ toxicity - repeated exposure	:	Category 2 (Thyroid)

Other hazards

Product not completely tested. Take maximum precautions when handling. If swallowed, may cause severe irritation and injury to the mouth, throat and digestive tract.
Possible cross sensitization with other acrylates and methacrylates. Effects due to processing releases or residual monomer: Irritating to eyes, respiratory system and skin. Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure). This product may release fume and/or vapor of variable composition depending on processing time and temperature.

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H331 Toxic if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H360 May damage fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs (Thyroid) through prolonged or repeated exposure.

Supplemental Hazard Statements	:	Corrosive to the respiratory tract. Specific target organ toxicity - repeated exposure: Peripheral nervous system thyroid Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.
Precautionary statements	:	**Prevention:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260 Do not breathe mist or vapours. 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 must not be allowed out of the workplace. P280 Wear protective gloves or eye protection or face protection. P280 Wear protective gloves, protective clothing, eye protection and face protection. **Response:** P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. P302 + P352 IF ON SKIN: Wash with plenty of water. P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor. P305 + P351 + P338 + P310 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. P308 + P313 IF exposed or concerned: Get medical advice/ attention. P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention. P362 + P364 Take off contaminated clothing and wash it before reuse. **Storage:** P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

Disposal:

P501 Dispose of contents or container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : resin

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
2-Propen-1-one, 1-(4-morpholinyl)-	5117-12-4*	>= 45 - <= 70	-
2-Propenamide	79-06-1*	>= 10 - <= 30	-
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	9036-19-5*	>= 10 - <= 30	-
Proprietary catalyst	1002022	>= 0.1 - <= 1	TSI
Cyclic amide	1006905	>= 0.1 - <= 1	TSI

* Indicates that the identifier is a CAS No.
TSI- the chemical identity is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

If inhaled : If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention.
Call a Poison Control Center.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact	:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
If swallowed	:	If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. Toxic if inhaled. May cause genetic defects. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Corrosive to the respiratory tract.

Indication of any immediate medical attention and special treatment needed

Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Carbon dioxide (CO2) Foam Dry chemical
Specific hazards during firefighting	:	When burned, the following hazardous products of combustion can occur: Carbon oxides Hazardous organic compounds phosphorous oxides Aldehydes Alcohols Nitrogen oxides Ethers Carboxylic acid sulfur oxides

		Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Further information	:	Fight fire from a protected location. Cool closed containers exposed to fire with water spray. Closed containers of this material may explode when subjected to heat from surrounding fire. Fire fighting equipment should be thoroughly decontaminated after use.
Special protective equipment for firefighters	:	Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.
Methods and materials for containment and cleaning up	:	After cleaning, flush away traces with water. Shovel into suitable container for disposal. Absorb the remainder with an inert absorbent material (sand, vermiculite, perlite). Use clean non-sparking tools to collect absorbed material.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Do not taste or swallow.

		Do not get in eyes, on skin, or on clothing. Do not breathe vapor or mist. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Emptied container retains vapor and product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed. Viscous materials and those supplied as solids at room temperature may require heating to facilitate handling and transfer from their original containers. This product may be heated to a maximum of 50C/122F for up to 24 hours. Do NOT use localized heat sources such as band heaters or steam. Use hot boxes or hot rooms for heating or melting. Ensure air space (oxygen) is present during product heating/melting. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. This product should be consumed in its entirety after heating/melting. Avoid re-heating multiple times; this may cause product degradation. If this product freezes, heat it as specified above and mix gently to redistribute the inhibitor.
Conditions for safe storage	:	Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store out of direct sunlight in a cool well-ventilated place. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere. Keep stabilizer levels constant to avoid spontaneous polymerization. Closed containers may rupture or explode during uncontrolled polymerization.
Materials to avoid	:	Store separate from: Strong oxidizing agents Strong reducing agents Free radical generators Inert gas Oxygen scavenger. Peroxides Strong acids Strong bases Iron Strong alkalies

Recommended storage temperature	:	32 - 100 °F / 0 - 38 °C
Further information on storage stability	:	Inhibitor levels should be maintained. The typical shelf-life for this product is 6 months.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-Propenamide	79-06-1	SKIN (Inhalable fraction and vapor.)		ACGIH
		TWA (Inhalable fraction and vapor.)	0.03 mg/m3	ACGIH
		PEL	0.3 mg/m3	OSHA_TRANS
Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-	9036-19-5	(Aerosol)		WEEL
		TWA (Aerosol)	10 mg/m3	WEEL

Engineering measures : Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above).
If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.
Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Personal protective equipment

Respiratory protection : Do not breathe vapor or mist.
Where airborne exposure is likely, use NIOSH approved full face respirator coupled with an appropriate cartridge and filter

type:
Full face piece, APF-50 respirator with organic vapor/acid cartridge or canister.
Observe respirator use limitations specified by NIOSH or the manufacturer.
For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.
Respiratory protection programs must comply with 29 CFR § 1910.134.

Hand protection

Remarks	:	Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. When handling this material, gloves of the following type(s) should be worn: Gloves that are impervious to the chemical substance. Avoid natural rubber gloves. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.
Eye protection	:	Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	viscous, liquid
Colour	:	Yellow
Odour	:	acrylic-like
Odour Threshold	:	No data available
pH	:	No data available

Melting point/ range	:	No data available
Freezing point		No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	1,200 CPS (77 °F / 25 °C) Method: Brookfield
Viscosity, kinematic	:	No data available

Particle characteristics		
Particle size	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	The product is normally supplied in a stabilized form. If the permissible storage period and/or storage temperature is noticeably exceeded, the product may polymerise with heat evolution.
Chemical stability	:	This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization.
Possibility of hazardous reactions	:	Hazardous polymerisation may occur. Polymerization is exothermic and can degenerate into an uncontrolled reaction.
Conditions to avoid	:	This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Avoid direct sunlight. Do NOT expose to ultraviolet light.
Incompatible materials	:	Strong reducing agents Free radical generators Inert gas Oxygen scavenger. Peroxides Strong oxidizing agents Strong alkalies Iron Strong acids Strong bases
Hazardous decomposition products	:	Thermal decomposition giving flammable and toxic products : Acrylates phosphorous oxides Nitrogen oxides (NOx) Hazardous organic compounds Aldehydes Alcohols ethers Carboxylic acids

Carbon oxides
sulfur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.
Toxic if inhaled.

Product:

Acute oral toxicity	:	Acute toxicity estimate: = 480.76 mg/kg Method: Calculation method Assessment: Harmful if swallowed. Acute toxicity estimate: 500.29 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: = 1.03 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method Assessment: Harmful if inhaled. Remarks: dust/mist Acute toxicity estimate: 0.9982 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method Assessment: Practically nontoxic. Acute toxicity estimate: 2,722 mg/kg Method: Calculation method

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Acute oral toxicity	:	LD50 (Rat): 588 mg/kg Assessment: Harmful if swallowed.
Acute inhalation toxicity	:	LC50 (Rat): > 0.82 - < 1.13 mg/l Exposure time: 4 h Test atmosphere: dust/mist

Assessment: Toxic if inhaled.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: May be harmful in contact with skin.

2-Propenamide:

Acute oral toxicity : LD50 (Rat): 177 mg/kg
Assessment: Toxic if swallowed.

Acute inhalation toxicity : LC0 (Rat): >= 12.1 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Assessment: No deaths occurred.
Remarks: as aqueous solution

Acute dermal toxicity : LD50 (Rat): 1,141 mg/kg
Assessment: Harmful in contact with skin.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Acute oral toxicity : LD0 (Rat): > 2,000 mg/kg
Assessment: No deaths occurred.

Acute inhalation toxicity : LC0 (Rat): 2.5 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist
Assessment: No deaths occurred.

LC0 (Mouse): 2.5 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist
Assessment: No deaths occurred.

Acute dermal toxicity : LD0 (Rat): > 2,000 mg/kg
Assessment: No deaths occurred.

Proprietary catalyst:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Assessment: Practically nontoxic.

Acute inhalation toxicity : (Rat): Exposure time: 7 h
Test atmosphere: vapour
Assessment: No deaths occurred.
Remarks: saturated vapor

Acute dermal toxicity	:	LD0 (Rat): 2,000 mg/kg Assessment: No deaths occurred.

Cyclic amide:

Acute oral toxicity	:	LD0 (Rat): > 2,000 mg/kg Assessment: No deaths occurred.
Acute inhalation toxicity	:	LC0 (Rat): > 0.061 mg/l Exposure time: 8 h Test atmosphere: dust/mist Assessment: No deaths occurred.
Acute dermal toxicity	:	LD0 (Rabbit): > 2,000 mg/kg Assessment: No deaths occurred.

Skin corrosion/irritation

Causes skin irritation.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Species	:	Rabbit
Result	:	No skin irritation

2-Propenamide:

Species	:	Rabbit
Result	:	No skin irritation
Species	:	Human
Result	:	Skin irritation
Remarks	:	largely based on human evidence

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Species	:	Rabbit
Exposure time	:	4 h
Result	:	No skin irritation
Remarks	:	occluded exposure

Proprietary catalyst:

Species	:	Rabbit
Result	:	No skin irritation
Remarks	:	occluded exposure

Cyclic amide:

Species	:	Rabbit
Result	:	No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Species	:	Rabbit
Result	:	Corrosive

2-Propenamide:

Species	:	Rabbit
Result	:	Eye irritation

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Species	:	Rabbit
Result	:	No eye irritation

Proprietary catalyst:

Species	:	Rabbit
Result	:	No eye irritation

Cyclic amide:

Species	:	Rabbit
Result	:	Eye irritation

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified due to lack of data.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Test Type	:	Guinea pig maximization test
Result	:	The product is a skin sensitiser, sub-category 1B.

2-Propenamide:

Test Type	:	Guinea pig maximization test
Result	:	The product is a skin sensitiser, sub-category 1B.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Test Type	:	Guinea pig maximization test
Result	:	Not a skin sensitizer.

Proprietary catalyst:

Test Type	:	LLNA: Local Lymph Node Assay
Species	:	Mouse
Result	:	The product is a skin sensitiser, sub-category 1B.

Cyclic amide:

Test Type	:	LLNA: Local Lymph Node Assay
Species	:	Mouse
Result	:	Not a skin sensitizer.
Remarks	:	data for a similar material

Germ cell mutagenicity

May cause genetic defects.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Genotoxicity in vitro	:	Remarks: No genetic changes were observed in laboratory tests using: bacteria Remarks: Genetic changes were observed in laboratory tests using: animal cells, human cells.
Genotoxicity in vivo	:	Remarks: No genetic changes were observed in laboratory tests using: mice, rats.
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

2-Propenamide:

Genotoxicity in vitro	:	Remarks: Both positive and negative responses for genetic changes were observed in laboratory tests using:

		animal cells Remarks: No genetic changes were observed in a laboratory test using: bacteria
Genotoxicity in vivo	:	Remarks: Genetic changes were observed in laboratory tests using: mice, rats.
Germ cell mutagenicity - Assessment	:	In vivo tests showed mutagenic effects

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Genotoxicity in vitro	:	Remarks: No genetic changes were observed in a laboratory test using: bacteria, animal cells.
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Proprietary catalyst:

Genotoxicity in vitro	:	Remarks: No genetic changes were observed in laboratory tests using: bacteria, animal cells. Remarks: An equivocal response has been reported in a test using: human cells
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Cyclic amide:

Genotoxicity in vitro	:	Remarks: No genetic changes were observed in laboratory tests using: bacteria, animal cells.
Genotoxicity in vivo	:	Remarks: No genetic changes were observed in a laboratory test using: mouse
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

May cause cancer.

Components:

2-Propenamide:

Species	:	Rat
Application Route	:	Drinking water
Result	:	Increased incidence of tumors was reported.
Target Organs	:	Thyroid gland, Mammary gland, Testes
Carcinogenicity - Assessment	:	Possible human carcinogen Classified by the International Agency for Research on Cancer as: Group 2A: Probably carcinogenic to humans., Listed by the National Toxicology Program as: Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

May damage fertility or the unborn child.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Effects on fertility	:	Test Type: Reproductive/Developmental Effects Screening Assay Species: Rat Application Route: Oral Result: No toxicity to reproduction.
Effects on foetal development	:	Test Type: Reproductive/Developmental Effects Screening Assay Species: Rat Application Route: Oral Result: No birth defects were observed. Remarks: impaired pup growth and development
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

2-Propenamide:

Effects on fertility	:	Test Type: Two generation reproduction study Species: Rat

Application Route: Oral
Result: Effects on fertility and offspring
Remarks: smaller litter sizes

Effects on foetal development	:	Test Type: Exposure during pregnancy Species: Rat Application Route: Oral Result: No birth defects were observed.
Reproductive toxicity - Assessment	:	Suspected human reproductive toxicant

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Effects on fertility	:	Test Type: Multiple generation reproduction test Species: Rat Application Route: Drinking water Result: No toxicity to reproduction. Test Type: Reproductive/Developmental Effects Screening Assay Species: Rat Application Route: Oral Result: No toxicity to reproduction.
Effects on foetal development	:	Test Type: Exposure during pregnancy Species: Rat Application Route: Oral Result: No birth defects were observed. Test Type: Exposure during pregnancy Species: Rabbit Application Route: Dermal Result: No birth defects were observed.
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

Proprietary catalyst:

Effects on foetal development	:	Test Type: Exposure during pregnancy Species: Rat Application Route: Oral Result: No birth defects were observed. Remarks: skeletal variations at doses that produce effects in mothers

Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

Cyclic amide:

Effects on foetal development	:	Test Type: Pre-natal Species: Rabbit Application Route: Oral Symptoms: Malformations were observed., Reduced body weight, Skeletal and visceral variations Result: Birth defects were observed.
Reproductive toxicity - Assessment	:	Presumed human reproductive toxicant

STOT - single exposure

Corrosive to the respiratory tract.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Assessment	:	Corrosive to the respiratory tract.

2-Propenamide:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

Proprietary catalyst:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

Cyclic amide:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.
May cause damage to organs (Thyroid) through prolonged or repeated exposure.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Target Organs	:	Thyroid gland
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

2-Propenamide:

Target Organs	:	Peripheral nervous system
Assessment	:	Causes damage to organs through prolonged or repeated exposure.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Proprietary catalyst:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Cyclic amide:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Repeated
Target Organs	:	Thyroid gland
Symptoms	:	changes in organ structure or function

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Repeated
Target Organs	:	Liver
Symptoms	:	changes in organ weights

2-Propenamide:

Species	:	Rat

Application Route	:	Drinking water
Exposure time	:	Chronic
Target Organs	:	Mammary gland, Peripheral nervous system, Testes, Thyroid gland
Symptoms	:	changes in organ structure or function

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Species	:	Rat
Application Route	:	Inhalation
Exposure time	:	Subchronic
Symptoms	:	No adverse systemic effects reported.

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Subchronic
Symptoms	:	No adverse systemic effects reported.

Species	:	Dog
Application Route	:	Oral
Exposure time	:	Subchronic
Symptoms	:	No adverse systemic effects reported.

Proprietary catalyst:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Subchronic
Target Organs	:	kidney, liver
Symptoms	:	decreased growth rate, clinical chemistry changes, changes in blood cell counts, changes in organ structure or function
Remarks	:	at high doses

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Repeated
Symptoms	:	No adverse systemic effects reported.

Cyclic amide:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	Repeated
Target Organs	:	Kidney
Symptoms	:	No adverse systemic effects reported., changes in organ weights, changes in organ structure or function, (at the highest dose level)

Aspiration toxicity

Based on available data, the classification criteria are not met.

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

No aspiration toxicity classification

2-Propenamide:

No aspiration toxicity classification

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

No aspiration toxicity classification

Proprietary catalyst:

No aspiration toxicity classification

Cyclic amide:

No aspiration toxicity classification

Experience with human exposure

Components:

2-Propenamide:

General Information	:	Central nervous system effects: headache, nausea, dizziness, drowsiness, loss of consciousness.
Inhalation	:	Target Organs: Nervous system Symptoms: fatigue, numbness and tingling of hands and feet, tremors, muscular weakness, loss of muscle coordination, speech impairment, hallucinations Remarks: (based on reports of occupational exposure to workers) (repeated or prolonged exposure)
Skin contact	:	Target Organs: Skin Symptoms: dermatitis, irritation Remarks: (based on reports of occupational exposure to workers) (repeated or prolonged exposure)

Target Organs: Nervous system
Symptoms: fatigue, numbness and tingling of hands and feet, tremors, muscular weakness, loss of muscle coordination, speech impairment, hallucinations
Remarks: Can be absorbed through the skin.
(based on reports of occupational exposure to workers)
(repeated or prolonged exposure)

Eye contact : Target Organs: Eyes
Symptoms: irritating

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Skin contact : Target Organs: Skin
Symptoms: rash
Remarks: (subjects with dermatitis or eczema)

Target Organs: Skin
Symptoms: No skin allergy was observed
Remarks: (studied using human volunteers)

Further information

Components:

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

The information presented is from representative materials with this Chemical Abstract Service (CAS) Registry number. The results vary depending on the size and composition of the test substance.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 220 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 120 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 120 mg/l
Exposure time: 72 h

		NOEC r (Pseudokirchneriella subcapitata (green algae)): 120 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC50 (Activated sludge): > 100 mg/l Exposure time: 3 h Test Type: Respiration inhibition

2-Propenamide:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 180 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 98 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	IC50 (Pseudokirchneriella subcapitata (green algae)): >= 33.9 mg/l Exposure time: 72 h
		NOEC r (Pseudokirchneriella subcapitata (green algae)): 16 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Cyprinus carpio (Carp)): 5 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Mysidopsis bahia (opossum shrimp)): 2.04 mg/l Exposure time: 28 d

Ecotoxicology Assessment

Acute aquatic toxicity	:	Harmful to aquatic life.

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Toxicity to fish	:	LC50 (Poecilia reticulata (guppy)): > 100 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h

Proprietary catalyst:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 1.89 mg/l Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.26 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): 1.01 mg/l Exposure time: 72 h
Toxicity to microorganisms	:	EC20 (Activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: Respiration inhibition

Ecotoxicology Assessment

Acute aquatic toxicity	:	Toxic to aquatic life.
Chronic aquatic toxicity	:	Toxic to aquatic life with long lasting effects.

Cyclic amide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 4,600 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 500 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): > 500 mg/l Exposure time: 72 h

Persistence and degradability

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 35 % Exposure time: 28 d

2-Propenamide:

Biodegradability	:	Result: Readily biodegradable Biodegradation: 100 % Exposure time: 28 d

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Biodegradability	:	Result: Readily biodegradable

Biodegradation: 74.9 %
Exposure time: 28 d

Proprietary catalyst:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d

Cyclic amide:

Biodegradability : Result: Readily biodegradable
Biodegradation: 73 %
Exposure time: 28 d
Remarks: data for a similar material

Bioaccumulative potential

Components:

2-Propen-1-one, 1-(4-morpholinyl)-:

Partition coefficient: n-octanol/water : log Pow: -0.46 (70 °F / 21 °C)

2-Propenamide:

Partition coefficient: n-octanol/water : log Pow: 0.9 (68 °F / 20 °C)
pH: 7

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Partition coefficient: n-octanol/water : log Pow: -0.698 (86 °F / 30 °C)
pH: 6.44

Proprietary catalyst:

Partition coefficient: n-octanol/water : log Pow: 2.91 (77 °F / 25 °C)
pH: 4.4

Cyclic amide:

Partition coefficient: n-octanol/water : log Pow: -0.71 (77 °F / 25 °C)

Mobility in soil

No data available

Other adverse effects

Components:

Poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-:

Additional ecological information	:	The information presented is from representative materials with this Chemical Abstract Service (CAS) Registry number. The results vary depending on the size and composition of the test substance.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IMDG-Code
Not regulated as a dangerous good

National Regulations

49 CFR Road
Not regulated as a dangerous good

Special precautions for user

Remarks	:	Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	This product complies with the TSCA inventory requirements. 2-Propen-1-one, 1-(4-morpholinyl)- is subject to the provisions of a Significant New Use Rule (SNUR) published by the Environmental Protection Agency (EPA) in 40 CFR Part SNUR 721.5185. This SNUR applies not only to Arkema Inc., but also to all customers and processors.
Canadian Domestic Substances List (DSL)	DSL	This product contains one or several components that are not on the Canadian DSL nor NDSL lists.
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Not all components of this product are listed or exempted
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Not all components of this product are listed or exempted
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Not all components of this product are listed or exempted
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Not all components of this product are listed or exempted
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Not all components of this product are listed or exempted
Australian Inventory of Industrial Chemicals	AU AIICL	Not all components of this product are listed or exempted
Taiwan Chemical Substance Inventory (TCSI)	TCSI	Not all components of this product are listed or exempted

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:

Chemical name	CAS-No.	SARA Reportable Quantities	SARA Threshold Planning Quantity
2-Propenamide	79-06-1	5000 lbs	1000 lbs 10000 lbs

SARA Title III - Section 311/312 Hazard Categories:
Acute toxicity (any route of exposure)
Respiratory or skin sensitisation
Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Self-reactive chemicals

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

Chemical name	CAS-No.	De minimis concentration	Reportable threshold:
2-Propenamide	79-06-1	0.1 %	10000 lbs (Otherwise used (non-manufacturing/processing)) 25000 lbs (Manufacturing and processing)

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

Chemical name	CAS-No.	Reportable quantity
2-Propenamide	79-06-1	5000 lbs

Toxic Substances Control Act – Section 12(b):

Chemical name	CAS-No.
2-Propen-1-one, 1-(4-morpholinyl)-	(5117-12-4)

United States – State Regulations

California Prop. 65
WARNING! This product contains a chemical known to the State of California to cause cancer.

Chemical name	CAS-No.
2-Propenamide	79-06-1

California Prop. 65
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Chemical name	CAS-No.
2-Propenamide	79-06-1

SECTION 16. OTHER INFORMATION

Latest Revision(s):

Reference number:	200028390
Date of Revision:	12/19/2025
Date Printed:	12/19/2025

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