

Fluoroplastic FEP Aqueous dispersion

Gujarat Fluorochemicals Ltd.

Version No: 2.2
Safety Data Sheet (Conforms to Regulation (EC) No 2015/830)

Issue Date: 02/09/2016
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S.REACH.GBR.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product Identifier

Product name	Fluoroplastic FEP Aqueous dispersion
Synonyms	INOFLON® FEP 4910
Other means of identification	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Coating
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

Registered company name	Gujarat Fluorochemicals Ltd.
Address	12/ A Dahej Industrial Estate GIDC
Telephone	+91-2641-618003
Fax	+91-2641-618012
Website	www.inoflon.com
Email	inoflon@gfl.co.in

1.4. Emergency telephone number

Association / Organisation	Gujarat Fluorochemicals Ltd
Emergency telephone numbers	+91-2641-618080-81
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Not classified as Dangerous Goods for transport purposes.

CHEMWATCH HAZARD RATINGS

	Min	Max	
Flammability	0		
Toxicity	0		0 = Minimum
Body Contact	2		1 = Low
Reactivity	0		2 = Moderate
Chronic	0		3 = High
			4 = Extreme

Classification according to regulation (EC) No 1272/2008 [CLP] [1]	Serious Eye Damage Category 1, Skin Corrosion/Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)
Legend:	1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

2.2. Label elements

CLP label elements	
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SIGNAL WORD	DANGER
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Hazard statement(s)

Continued...

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H318	Causes serious eye damage.
H315	Causes skin irritation.
H335	May cause respiratory irritation.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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2.3. Other hazards

Cumulative effects may result following exposure*.

Limited evidence of a carcinogenic effect*.

Eye contact may produce serious damage*.

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
1.25067-11-2 2.Not Available 3.Not Available 4.01-2119850115-46-XXXX	50-60	<u>tetrafluoroethylene/ hexafluoropropylene copolymer</u>	Not Applicable
1.7732-18-5 2.231-791-2 3.Not Available 4.Not Available	30-50	<u>water</u>	Not Applicable
1.60828-78-6 2.Not Available 3.Not Available 4.Not Available	1-5	<u>trimethylnonyl ether ethoxylated</u>	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Chronic Aquatic Hazard Category 4; H302, H315, H318, H413 ^[1]

Legend: 1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

General	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. <p>For thermal burns:</p> <ul style="list-style-type: none"> ▶ Decontaminate area around burn. ▶ Consider the use of cold packs and topical antibiotics. <p>For first-degree burns (affecting top layer of skin)</p> <ul style="list-style-type: none"> ▶ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides.
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- ‡ Use compresses if running water is not available.
- ‡ Cover with sterile non-adhesive bandage or clean cloth.
- ‡ Do NOT apply butter or ointments; this may cause infection.
- ‡ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur. For second-degree burns (affecting top two layers of skin)
- ‡ Cool the burn by immerse in cold running water for 10-15 minutes.
- ‡ Use compresses if running water is not available.
- ‡ Do NOT apply ice as this may lower body temperature and cause further damage.
- ‡ Do NOT break blisters or apply butter or ointments; this may cause infection.
- ‡ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape. To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort):
 - ‡ Lay the person flat.
 - ‡ Elevate feet about 12 inches.
 - ‡ Elevate burn area above heart level, if possible.
 - ‡ Cover the person with coat or blanket.
 - ‡ Seek medical assistance.
- For third-degree burns
Seek immediate medical or emergency assistance. In the mean time:
 - ‡ Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound.
 - ‡ Separate burned toes and fingers with dry, sterile dressings.
 - ‡ Do not soak burn in water or apply ointments or butter; this may cause infection.
 - ‡ To prevent shock see above.
 - ‡ For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway.
 - ‡ Have a person with a facial burn sit up.
 - ‡ Check pulse and breathing to monitor for shock until emergency help arrives.
- In case of burns:
 - ‡ Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth.
 - ‡ **DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury.**
 - ‡ **DO NOT break blister or remove solidified material.**
 - ‡ Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain.
 - ‡ For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth.
 - ‡ **DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances.**
 - ‡ Water may be given in small quantities if the person is conscious.
 - ‡ Alcohol is not to be given under any circumstances.
 - ‡ Reassure.
 - ‡ Treat for shock by keeping the person warm and in a lying position.
 - ‡ Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.
- If this product comes in contact with the eyes:
 - ‡ Immediately hold eyelids apart and flush the eye continuously with running water.
 - ‡ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - ‡ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
 - ‡ Transport to hospital or doctor without delay.
 - ‡ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
 - ‡ If fumes or combustion products are inhaled remove from contaminated area.
 - ‡ Lay patient down. Keep warm and rested.
 - ‡ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
 - ‡ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
 - ‡ Transport to hospital, or doctor, without delay.
 - ‡ Immediately give a glass of water.
 - ‡ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Eye Contact

- If this product comes in contact with the eyes:
 - ‡ Immediately hold eyelids apart and flush the eye continuously with running water.
 - ‡ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - ‡ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
 - ‡ Transport to hospital or doctor without delay.
 - ‡ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

- If skin contact occurs:
 - ‡ Immediately remove all contaminated clothing, including footwear.
 - ‡ Flush skin and hair with running water (and soap if available).
 - ‡ Seek medical attention in event of irritation. For thermal burns:
 - ‡ Decontaminate area around burn.
 - ‡ Consider the use of cold packs and topical antibiotics.
- For first-degree burns (affecting top layer of skin)
 - ‡ Hold burned skin under cool (not cold) running water or immerse in cool water until pain subsides.
 - ‡ Use compresses if running water is not available.
 - ‡ Cover with sterile non-adhesive bandage or clean cloth.
 - ‡ Do NOT apply butter or ointments; this may cause infection.
 - ‡ Give over-the counter pain relievers if pain increases or swelling, redness, fever occur. For second-degree burns (affecting top two layers of skin)
 - ‡ Cool the burn by immerse in cold running water for 10-15 minutes.
 - ‡ Use compresses if running water is not available.
 - ‡ Do NOT apply ice as this may lower body temperature and cause further damage.
 - ‡ Do NOT break blisters or apply butter or ointments; this may cause infection.
 - ‡ Protect burn by cover loosely with sterile, nonstick bandage and secure in place with gauze or tape. To prevent shock: (unless the person has a head, neck, or leg injury, or it would cause discomfort):
 - ‡ Lay the person flat.
 - ‡ Elevate feet about 12 inches.
 - ‡ Elevate burn area above heart level, if possible.
 - ‡ Cover the person with coat or blanket. Seek medical assistance.
- For third-degree burns

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	<p>Seek immediate medical or emergency assistance. In the mean time:</p> <ul style="list-style-type: none"> ‣ Protect burn area cover loosely with sterile, nonstick bandage or, for large areas, a sheet or other material that will not leave lint in wound. ‣ Separate burned toes and fingers with dry, sterile dressings. ‣ Do not soak burn in water or apply ointments or butter; this may cause infection. ‣ To prevent shock see above. ‣ For an airway burn, do not place pillow under the person's head when the person is lying down. This can close the airway. ‣ Have a person with a facial burn sit up. ‣ Check pulse and breathing to monitor for shock until emergency help arrives. <p>In case of burns:</p> <ul style="list-style-type: none"> ‣ Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth. ‣ DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury. ‣ DO NOT break blister or remove solidified material. ‣ Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain. ‣ For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth. ‣ DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances. ‣ Water may be given in small quantities if the person is conscious. ‣ Alcohol is not to be given under any circumstances. ‣ Reassure. ‣ Treat for shock by keeping the person warm and in a lying position. ‣ Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.
Inhalation	<ul style="list-style-type: none"> ‣ If fumes or combustion products are inhaled remove from contaminated area. Lay patient down. Keep warm and rested. ‣ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ‣ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ‣ Transport to hospital, or doctor, without delay.
Ingestion	<ul style="list-style-type: none"> ‣ Immediately give a glass of water. ‣ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

5.1. Extinguishing media

- **Do NOT direct a solid stream of water or foam into burning molten material; this may cause spattering and spread the fire.**

The product contains a substantial proportion of water, therefore there are no restrictions on the type of extinguishing media which may be used. Choice of extinguishing media should take into account surrounding areas.

Though the material is non-combustible, evaporation of water from the mixture, caused by the heat of nearby fire, may produce floating layers of combustible substances. In such an event consider:

- foam.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.
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5.3. Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ Wear breathing apparatus plus protective gloves in the event of a fire. ‣ Prevent, by any means available, spillage from entering drains or water courses. ‣ Use fire fighting procedures suitable for surrounding area.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ‣ The material is not readily combustible under normal conditions. ‣ However, it will break down under fire conditions and the organic component may burn. ‣ Not considered to be a significant fire risk. ‣ Heat may cause expansion or decomposition with violent rupture of containers. <p>Decomposes on heating and produces toxic fumes of: carbon dioxide (CO₂), hydrogen fluoride, other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes. CARE: Contamination of heated / molten liquid with water may cause violent steam explosion, with scattering of hot contents.</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	<ul style="list-style-type: none"> ‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. <p>Control personal contact with the substance, by using protective equipment.</p> <ul style="list-style-type: none"> ‣ Contain and absorb spill with sand, earth, inert material or vermiculite.
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Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.
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6.4. Reference to other sections

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT allow clothing wet with material to stay in contact with skin
Fire and explosion protection	See section 5
Other information	

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Polyethylene or polypropylene container. ▶ Packing as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	For polytetrafluoroethylene (PTFE) and other related polyfluorinated polymers: Avoid storage with strong oxidising agents, tetrafluoroethylene, hexafluoroethylene, perfluoroisobutylene, carbonyl fluoride and hydrogen fluoride. None known

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Fluoroplastic FEP Aqueous dispersion	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
tetrafluoroethylene/hexafluoropropylene copolymer	Not Available	Not Available
water	Not Available	Not Available
trimethylnonyl ether ethoxylated	Not Available	Not Available

8.2. Exposure controls

8.2.1. Appropriate engineering controls	<p>For molten materials: Provide mechanical ventilation; in general such ventilation should be provided at compounding/ converting areas and at fabricating/ filling work stations where the material is heated. Local exhaust ventilation should be used over and in the vicinity of machinery involved in handling the molten material. Keep dry!! Processing temperatures may be well above boiling point of water, so wet or damp material may cause a serious steam explosion if used in unvented equipment. Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p>
8.2.2. Personal protection	

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Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <ul style="list-style-type: none"> ▶ When handling hot materials wear heat resistant, elbow length gloves. ▶ Rubber gloves are not recommended when handling hot objects, materials ▶ Protective gloves eg. Leather gloves or gloves with Leather facing ▶ Neoprene rubber gloves
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ When handling hot or molten liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. ▶ Usually handled as molten liquid which requires worker thermal protection and increases hazard of vapour exposure. ▶ CAUTION: Vapours may be irritating. ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	A
NEOPRENE	A
VITON	A
NATURAL RUBBER	C
PVA	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	-AUS P2	-	-PAPR-AUS / Class 1 P2
up to 50 x ES	-	-AUS / Class 1 P2	-
up to 100 x ES	-	-2 P2	-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.

For molten materials: 76a-p()

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	white liquid		
Physical state	Liquid	Relative density (Water = 1)	1.4-1.5
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	9-11	Decomposition temperature	Not Available
Melting point / freezing point (°C)	255-270	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	100	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available

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Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1.Reactivity	See section 7.2
10.2.Chemical stability	<ul style="list-style-type: none"> ‡ Unstable in the presence of incompatible materials. Product is considered stable. ‡ Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. At temperatures of over 400 deg. C the polymer begins to decompose with the reaction becoming faster as temperature rises. Fumes from burning materials containing PTFE irritate the upper airway and may be harmful if exposure is prolonged. Overheated or burnt PTFE releases hydrogen fluoride (a highly irritating and corrosive gas) and small amounts of carbonyl fluoride (highly toxic). The material has NOT been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.</p> <ul style="list-style-type: none"> ‡ Usually handled as molten liquid which requires worker thermal protection and increases hazard of vapour exposure. CAUTION: Vapours may be irritating.
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	<p>This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>
Eye	If applied to the eyes, this material causes severe eye damage.
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Fluoroplastic FEP Aqueous dispersion	TOXICITY	IRRITATION
	Not Available	Not Available
tetrafluoroethylene/hexafluoropropylene copolymer	TOXICITY	IRRITATION
	Oral (rat) LD50: 1250 mg/kg ^[2]	Nil reported * [Manufacturer]
water	TOXICITY	IRRITATION
	Oral (rat) LD50: >90000 mg/kg ^[2]	Not Available
trimethylnonyl ether ethoxylated	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 4780 mg/kg ^[2]	Eye (rabbit): 100 mg-SEVERE
	Oral (rat) LD50: 5650 mg/kg ^[2]	Eye (rabbit): 5 mg - SEVERE Skin (rabbit): 500 (open) - mild

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Fluoroplastic FEP Aqueous dispersion	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as
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	reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.
TETRAFLUOROETHYLENE/ HEXAFLUOROPROPYLENE COPOLYMER	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. for a similar product:
WATER	No significant acute toxicological data identified in literature search.
TRIMETHYLNONYL ETHER ETHOXYLATED	Both laboratory and animal testing has shown that there is no evidence for alcohol ethoxylates (AEs) causing genetic damage, mutations or cancer. No adverse reproductive or developmental effects were observed. RTECS No.: WZ 6210000

Acute Toxicity	☐	Carcinogenicity	☐
Skin Irritation/Corrosion	✔	Reproductivity	☐
Serious Eye Damage/Irritation	✔	STOT - Single Exposure	✔
Respiratory or Skin sensitisation	☐	STOT - Repeated Exposure	☐
Mutagenicity	☐	Aspiration Hazard	☐

Legend: ✘ – Data available but does not fill the criteria for classification
✔ – Data required to make classification available
☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
water	LC50	96	Fish	897.520mg/L	3
water	EC50	96	Algae or other aquatic plants	8768.874mg/L	3
water	EC50	384	Crustacea	199.179mg/L	3

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
water	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)

12.4. Mobility in soil

Ingredient	Mobility
water	LOW (KOC = 14.3)

12.5. Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product / Packaging disposal	<p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails)
-------------------------------------	---

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	<p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material). ▶ Decontaminate empty containers.
Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable										
14.2. UN proper shipping name	Not Applicable										
14.3. Transport hazard class(es)	<table border="1"> <tr> <td>Class</td> <td>Not Applicable</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	Not Applicable	Subrisk	Not Applicable						
Class	Not Applicable										
Subrisk	Not Applicable										
14.4. Packing group	Not Applicable										
14.5. Environmental hazard	Not Applicable										
14.6. Special precautions for user	<table border="1"> <tr> <td>Hazard identification (Kemler)</td> <td>Not Applicable</td> </tr> <tr> <td>Classification code</td> <td>Not Applicable</td> </tr> <tr> <td>Hazard Label</td> <td>Not Applicable</td> </tr> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Limited quantity</td> <td>Not Applicable</td> </tr> </table>	Hazard identification (Kemler)	Not Applicable	Classification code	Not Applicable	Hazard Label	Not Applicable	Special provisions	Not Applicable	Limited quantity	Not Applicable
Hazard identification (Kemler)	Not Applicable										
Classification code	Not Applicable										
Hazard Label	Not Applicable										
Special provisions	Not Applicable										
Limited quantity	Not Applicable										

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable														
14.2. UN proper shipping name	Not Applicable														
14.3. Transport hazard class(es)	<table border="1"> <tr> <td>ICAO/IATA Class</td> <td>Not Applicable</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>Not Applicable</td> </tr> </table>	ICAO/IATA Class	Not Applicable	ICAO / IATA Subrisk	Not Applicable	ERG Code	Not Applicable								
ICAO/IATA Class	Not Applicable														
ICAO / IATA Subrisk	Not Applicable														
ERG Code	Not Applicable														
14.4. Packing group	Not Applicable														
14.5. Environmental hazard	Not Applicable														
14.6. Special precautions for user	<table border="1"> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>Not Applicable</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Not Applicable</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>Not Applicable</td> </tr> </table>	Special provisions	Not Applicable	Cargo Only Packing Instructions	Not Applicable	Cargo Only Maximum Qty / Pack	Not Applicable	Passenger and Cargo Packing Instructions	Not Applicable	Passenger and Cargo Maximum Qty / Pack	Not Applicable	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable
Special provisions	Not Applicable														
Cargo Only Packing Instructions	Not Applicable														
Cargo Only Maximum Qty / Pack	Not Applicable														
Passenger and Cargo Packing Instructions	Not Applicable														
Passenger and Cargo Maximum Qty / Pack	Not Applicable														
Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable														
Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable														

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable				
14.2. UN proper shipping name	Not Applicable				
14.3. Transport hazard class(es)	<table border="1"> <tr> <td>IMDG Class</td> <td>Not Applicable</td> </tr> <tr> <td>IMDG Subrisk</td> <td>Not Applicable</td> </tr> </table>	IMDG Class	Not Applicable	IMDG Subrisk	Not Applicable
IMDG Class	Not Applicable				
IMDG Subrisk	Not Applicable				
14.4. Packing group	Not Applicable				
14.5. Environmental hazard	Not Applicable				
14.6. Special precautions for user	<table border="1"> <tr> <td>EMS Number</td> <td>Not Applicable</td> </tr> <tr> <td>Special provisions</td> <td>Not Applicable</td> </tr> </table>	EMS Number	Not Applicable	Special provisions	Not Applicable
EMS Number	Not Applicable				
Special provisions	Not Applicable				

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Limited Quantities | Not Applicable

Inland waterways transport (ADN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

14.1. UN number	Not Applicable	
14.2. UN proper shipping name	Not Applicable	
14.3. Transport hazard class(es)	Not Applicable Not Applicable	
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	Not Applicable
	Special provisions	Not Applicable
	Limited quantity	Not Applicable
	Equipment required	Not Applicable
	Fire cones number	Not Applicable

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture****TETRAFLUOROETHYLENE/ HEXAFLUOROPROPYLENE COPOLYMER(25067-11-2) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex IV - Exemptions from the Obligation to Register in Accordance with Article 2(7)(a) (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Customs Inventory of Chemical Substances ECICS (English)

TRIMETHYLNONYL ETHER ETHOXYLATED(60828-78-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
tetrafluoroethylene/ hexafluoropropylene copolymer	25067-11-2	Not Available	01-2119850115-46-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
Not Available	Not Available	Not Available	Not Available

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
water	7732-18-5	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Not Classified	GHS06, GHS05, Dgr, GHS02, Wng	H301, H226, H314
2	Not Classified, Acute Tox. 3, Skin Corr. 1A, Acute Tox. 2, Flam. Liq. 3	GHS06, GHS05, Dgr, GHS02, Wng	H301, H226, H314

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
trimethylnonyl ether ethoxylated	60828-78-6	Not Available	Not Available

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Eye Dam. 1	GHS05, Dgr	H318
2	Eye Dam. 1, Eye Irrit. 2, Aquatic Chronic 3, Skin Irrit. 2, Not Classified, Aquatic Chronic 2	GHS05, Dgr, Wng, GHS09	H318, H315

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

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National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (trimethylnonyl ether ethoxylated; tetrafluoroethylene/ hexafluoropropylene copolymer; water)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	N (trimethylnonyl ether ethoxylated; tetrafluoroethylene/ hexafluoropropylene copolymer)
Japan - ENCS	N (trimethylnonyl ether ethoxylated; water)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Full text Risk and Hazard codes

H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H413	May cause long lasting harmful effects to aquatic life.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at: www.chemwatch.net

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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