COSTENOBLE
moving possibilities forward

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Krytox® Corrugator FG Series

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Krytox® Corrugator FG Series

Further trade names

226 FG, 227 FG
FG 30, 32, 34, 35, 36

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

Use of the substance/mixture

Lubricating agent

Uses advised against

none

1.3. Details of the supplier of the safety data sheet

Company name:	H. Costenoble GmbH & Co. KG	
Street:	Rudolf-Diesel-Str. 18	
Place:	D-65760 Eschborn / Taunus	
Post-office box:	5205 D-65727 Eschborn / Taunus	
Telephone:	(+49) (0)6173 / 9373 - 0	
e-mail:	service@costenoble.de	
Contact person:	Reinhold Luetke Huendfeld	Telephone: (+49)(0)6173 / 9373 - 27
e-mail:	R.Luetke-Huendfeld@costenoble.de	
Internet:	www.costenoble.de	

1.4. Emergency telephone number:

(+49)(0)6131 / 19240 (Poison Control Center)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Directive 67/548/EEC or 1999/45/EC

This mixture is not classified as hazardous according to Directive 1999/45/EC.

Classification according to Regulation (EC) No. 1272/2008 [CLP]

This mixture is not classified as hazardous according to Regulation (EC) No. 1272/2008.

2.2. Label elements

2.3. Other hazards

The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Repeated occurrence of polymer fume fever may lead to permanent lung damage.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
REACH No		
	Perfluoro alkylether	68 - 77 %
60164-51-4		
	Polytetrafluoroethylene	18 - 27 %
9002-84-0		
231-555-9	sodium nitrite	1 - 3 %
7632-00-0	O - Oxidizing, T - Toxic, N - Dangerous for the environment R8-25-50	
007-010-00-4	Ox. Sol. 3, Acute Tox. 3, Aquatic Acute 1 (M-Factor = 1); H272 H301 H400	

Full text of R, H and EUH phrases: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Never give anything by mouth to an unconscious person or a person with cramps. In all cases of doubt, or when symptoms persist, seek medical advice.

After inhalation

In case of inhalation of decomposition products, affected person should be moved into fresh air and kept still. Where appropriate artificial ventilation. Get medical advice/attention.

After contact with skin

Wash with plenty of water/.?.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses. If eye irritation persists: Consult an ophthalmologist.

After ingestion

Do NOT induce vomiting. Seek medical advice immediately.

4.2. Most important symptoms and effects, both acute and delayed

Irritant and corrosive effects, fever.

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

none

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

The product itself does not burn. Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

none

5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to the escape of irritating gases and vapours. Hazardous decomposition products: Fluorhydric acid. Fluorinated compounds.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No special precautionary measures are necessary.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal . Clear contaminated areas thoroughly.

6.4. Reference to other sections

See protective measures under point 7 and 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Do not use above following temperatures: 290 °C. Do not breathe vapour. When using do not eat, drink or smoke.

Advice on protection against fire and explosion

Usual measures for fire prevention.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Store in a dry place.

Advice on storage compatibility

none

7.3. Specific end use(s)

none

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation as well as local exhaustion at critical locations.

Protective and hygiene measures

Protect skin by using skin protective cream. When using do not eat, drink or smoke. Wash hands before breaks and after work.

Eye/face protection

Tightly sealed safety glasses.

Hand protection

Wear protective gloves. Suitable gloves type: NBR (Nitrile rubber).

Skin protection

No special measures are necessary. Avoid contact with skin, eyes and clothes.

Respiratory protection

Thermal decomposition can lead to the escape of irritating gases and vapours. Respiratory protection necessary at: Thermal decomposition. Filtering device (full mask or mouthpiece) with filter: ABE1

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	solid
Colour:	white
Odour:	odourless

		Test method
pH-Value:	neutral	

Changes in the physical state

Flash point:	Non-flammable.	

Explosive properties

not explosive.

Oxidizing properties

none

Density (at 24 °C):	1,89-1,93 g/cm³	
Water solubility:	insoluble	

9.2. Other information

Temperature of decomposition (°C): 300 °C

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

Stable under standard conditions.

10.3. Possibility of hazardous reactions

Stable under standard conditions.

10.4. Conditions to avoid

heat. Decompostion takes place from temperatures above: 300 °C

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

Fluorhydric acid. Pyrolysis products, contains fluorine.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

Acute toxicity (oral):
ALD > 11000 mg/kg (Rat)
LD50 > 5000 mg/kg (Rat)

Acute toxicity (inhalant): No data available. The thermal decomposition vapors of fluorinated polymers may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. The inhalation of large quantities may lead to a lung oedema.
- Perfluoroalkylether: ALC: = ca. 19.54 mg/l (4h, Rat)

Acute toxicity (dermal): No data available
- Perfluoroalkylether: ALD = ca. 17000 mg/l (Rabbit)

CAS No	Chemical name				
	Exposure route	Method	Dose	Species	Source
60164-51-4	Perfluoro alkylether				
	oral	LD50 mg/kg	> 11000	Rat	
	dermal	LD50 mg/kg	>17000	Rabbit	
9002-84-0	Polytetrafluoroethylene				
	oral	LD50	>11280 mg/kg	Rat	
7632-00-0	sodium nitrite				
	oral	LD50	180 mg/kg	Rat	GESTIS

Irritation and corrosivity

Irritant effect on the skin: Rabbit: Slight irritation. Not classified as irritant.

Serious eye damage/eye irritation: Rabbit: Slight irritation. Not classified as irritant.

Sensitising effects

Guinea-pig. Animal tests did not cause sensitisation by skin contact (method: Buehler Test).
- Perfluoroalkylether: No sensitisation in patch test on human volunteers (Modified Draize Test).

Severe effects after repeated or prolonged exposure

No data available.

Carcinogenic/mutagenic/toxic effects for reproduction

In-vitro mutagenicity: No data available.
- Perfluoroalkylether: No evidence for mutagenic effects in tests on cultured bacteria or mammal cells.
- Sodium nitrite: Tests yielded evidence for mutagenic effects on cultured bacteria cells.
Carcinogenicity: No data available.
- Sodium nitrite: Longterm animal experiment. Longterm experiments do not indicate carcinogenic effects.
Reproductive toxicity: No data available.
- Perfluoroalkylether: No indications of human reproductive toxicity exist.
- Sodium nitrite: No indications of human reproductive toxicity exist.

SECTION 12: Ecological information

12.1. Toxicity

No data available
- Perfluoroalkylether
LC50/96h/Oncorhynchus mykiss (rainbow trout): > 1000 mg/l
EC50/48h/Daphnia magna (water flea): > 1000 mg/l

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h] | [d]	Species	Source
60164-51-4	Perfluoro alkylether					
	Acute fish toxicity	LC50	>1000 mg/l	96 h	Oncorhynchus mykiss (Rainbow trout)	
	Acute algae toxicity	ErC50	>1000 mg/l		Pseudokirchneriella subcapitata	
	Acute crustacea toxicity	EC50	>100 mg/l	48 h	Daphnia magna (Big water flea)	
	Algea toxicity	NOEC	>1000 mg/l	3 d	Pseudokirchneriella subcapitata	
7632-00-0	sodium nitrite					
	Acute fish toxicity	LC50 mg/l	0,56 - 1,78	96 h	Onchorhynchus mykiss	
	Acute crustacea toxicity	EC50 mg/l	12,5 - 100	48 h	Daphnia magna	

12.2. Persistence and degradability

This product contains components which are not easily biodegradable.

12.3. Bioaccumulative potential

No data available

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7632-00-0	sodium nitrite	-3,7

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

No data available

12.6. Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal

Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

070607 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; halogenated still bottoms and reaction residues
Classified as hazardous waste.

Waste disposal number of used product

070607 WASTES FROM ORGANIC CHEMICAL PROCESSES; wastes from the MFSU of fats, grease, soaps, detergents, disinfectants and cosmetics; halogenated still bottoms and reaction residues
Classified as hazardous waste.

Waste disposal number of contaminated packaging

150102 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); plastic packaging

Contaminated packaging

Completely emptied packages can be recycled.

SECTION 14: Transport information

Land transport (ADR/RID)

Other applicable information (land transport)

No dangerous good in sense of this transport regulation.

Inland waterways transport (ADN)

Other applicable information (inland waterways transport)

No dangerous good in sense of these transport regulations.

Marine transport (IMDG)

Other applicable information (marine transport)

No dangerous good in sense of these transport regulations.

Air transport (ICAO)

Other applicable information (air transport)

No dangerous good in sense of these transport regulations.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

not applicable

14.7. 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

National regulatory information

Water contaminating class (D): 1 - slightly water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Relevant R phrases (number and full text)

08	Contact with combustible material may cause fire.
25	Toxic if swallowed.
50	Very toxic to aquatic organisms.

Relevant H and EUH statements (number and full text)

H272	May intensify fire; oxidiser.
H301	Toxic if swallowed.
H400	Very toxic to aquatic life.

Further Information

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

Krytox® is a registered trademark of E.I. Du Pont de Nemours & Co.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)