

## CLASS A WETTING AND FOAMING AGENT FOR FOREST FIRES

### DESCRIPTION

**ECOPOL F** is a wetting and foaming additive for forest fires and urban fires fighting. It can be used at very low concentration:

Wetting effect 0.1 – 0.5% / Foaming effect 0.5 – 1%.

▲ **Wetting ability:** the water with **ECOPOL F** deeply and quickly penetrates all solids, so multiplying the extinguishing power and preventing early fire restart.

**ECOPOL F** increases the speed of extinction on vegetation fires, car fires, house fires, dumping site fires, plastic fires, tyre fires...

▲ **Foaming ability:** **ECOPOL F** is usable at Low, Medium and High Expansion with all known equipment.

Its foam clings and sticks to vertical structure for a long time.

▲ **Corrosion:** **ECOPOL F** contains an additive NITRATE-FREE with a strong inhibition effect against metal corrosion.

**ECOPOL F** is applicable with methods from multi-engine fixed wing airtankers, single-engine airtankers, fixed tank helicopters, helicopter buckets, and ground engines.

▲ **Fuel fires:** **ECOPOL F** is efficient on all hydrocarbon fires, such as diesel, kerosene, petrol...

▲ **Environment:** **ECOPOL F** is harmless for environment and 100% biodegradable.

**ECOPOL F** is totally fluorine-free.

### PHYSICAL DATA

	ECOPOL F
<b>Appearance</b>	clear liquid
<b>Specific gravity at 70°F (21°C)</b>	1.03 ± 0.02
<b>pH at 70°F (21°C)</b>	7.5 ± 1.0
<b>Viscosity</b>	15 +/- 5 cP
<b>Sediments</b>	0%
<b>Surface Tension at 0.3%</b>	25 ± 2 mN/m
<b>Freezing Point</b>	10.4°F (-12°C)
<b>Storage temperature</b>	10.4°F / +120°F (-12°C / +49°C)



### PERFORMANCES & APPLICATIONS

**ECOPOL F** complies with standards:

▲ USDA FS 5100-307a

▲ NFPA 1150 [https://www.fs.fed.us/rm/fire/wfcs/documents/2020-1005\\_qp1\\_WE.pdf](https://www.fs.fed.us/rm/fire/wfcs/documents/2020-1005_qp1_WE.pdf)

USDA approved  
QPL Listed

**ECOPOL F** can be used with Compressed Air Foam Systems (CAFs).

**ECOPOL F** can be used for all structural fires with tap water, sea water and brackish water. Depending on the fuel and the intervention – extinction or protection – we recommend different methods of application:

FIRES	APPLICATION	CONCENTRATION
Low fires: bush, grass, sawdust, tundra, muskeg...	Wetting	0.1 %
High fires : standing timber, structures, farms...	Wetting foaming LE*	0.3 %
Urban fires : flat, houses, warehouses	Foaming LE*	0.3 %
Vehicles fires : cars, tractors...	Foaming LE* / ME*	1.0 %
Solid fires : plastic, tyres, wood, cotton...	Wetting foaming LE*	0.3 %
Warehouse flooding	Foaming HE*	1.0 %
Hydrocarbon fires	Foaming LE*	1.0 %

\* LE : Low Expansion \* ME : Medium Expansion \* HE : High Expansion

### WARRANTY & SERVICES

**ECOPOL F** has a 10 years warranty in its original packaging and at storage temperatures 10.4°F / +120°F (-12°C / +49°C).

Our Quality Control Laboratory offers its analytical expertise BIO-LAB.

Safety Data and Environment Data are available upon request: [contact@bio-ex.fr](mailto:contact@bio-ex.fr)

**SAFETY DATA SHEET**

(REACH regulation (EC) n° 1907/2006 - n° 2015/830)

**SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****1.1. Product identifier**

Product name : ECOPOL F

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

Fire fighting foam concentrate

**1.3. Details of the supplier of the safety data sheet**

Registered company name : BIO-EX.

Address : 5 chemin de Clape-Loup .69280.Sainte-Consoyce.FRANCE.

Telephone : +33 (0)4.74.70.23.81. Fax : +33 (0)4.74.70.23.94.

contact@bio-ex.fr

**1.4. Emergency telephone number : +33 (0)1 45 42 59 59.**Association/Organisation : INRS / ORFILA <http://www.centres-antipoison.net>.**SECTION 2 : HAZARDS IDENTIFICATION****2.1. Classification of the substance or mixture****In compliance with EC regulation No. 1272/2008 and its amendments.**

Skin irritation, Category 2 (Skin Irrit. 2, H315).

Serious eye damage, Category 1 (Eye Dam. 1, H318).

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

**2.2. Label elements****In compliance with EC regulation No. 1272/2008 and its amendments.**

Hazard pictograms :



GHS05

Signal Word :

DANGER

Product identifiers :

PROPRIETARY MIXTURE OF SURFACTANTS

Hazard statements :

H315

Causes skin irritation.

H318

Causes serious eye damage.

Precautionary statements - Prevention :

P280

Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statements - Response :

P302 + P352

IF ON SKIN: Wash with plenty of water/...

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362 + P364

Take off contaminated clothing and wash it before reuse.

Other information :

# **BIOEX**<sup>®</sup>

● *High Performance Foams*

## **ECOPOL F**

### **CLASS A WILDAND FIRES**

*CLASS A FOAM CONCENTRATE -  
WETTING AGENT FOR CLASS A WILDAND FIRES*

- Effective on class A wildland, forest, bush fires from 0.1% to 1%
- High wetting properties to make water more effective for in depth fire fighting
- Eco-friendly: fluorine-free and 100% biodegradable
- As efficient with salt, fresh and brackish water
- USDA Forest Service qualified QPL listed

# ECOPOL F



## ENVIRONMENT

**ECOPOL F** is an **ecological solution** for forest fires (Class A) which does not contain fluorinated derivatives (PFAS chemicals including PFOS or PFOA) or PBTs (Persistent, Bioaccumulative and Toxic substances). **ECOPOL F** is **100% biodegradable** with no impact on environment.

**ECOPOL F** is **non-toxic and non-corrosive**. This foam concentrate **does not have impact on animals and vegetation**.

**ECOPOL F** is compliant with the EPA Stewardship Program (US Environmental Protection Agency) and GWD (European Groundwater Directive).



## EFFECTIVENESS ON FIRES

Thanks to **its high wetting properties**, **ECOPOL F** is an ecological solution to extinguish efficiently wildland fires (forest, brush...). **ECOPOL F** provides optimum **effectiveness for wildland fire suppression with salt water, fresh water, and brackish water at all levels of hardness**.

**Wetting properties:** The use of **ECOPOL F** surfactants reduces water's surface tension and allows to penetrate and extinguish embers at depth and therefore be more effective and quicker than water alone. Thus it reduces efficiently the amount of water needed. Its long drain time provides longer surface wetting and prevents the fire from re-igniting. **ECOPOL F** wetting properties are among the best ones on the market.

**Expansion properties:** When mixed with air, **ECOPOL F** creates a high-quality foam blanket which insulates fuel from air and cools the fuel. The adhesive nature of the foam makes it possible to adhere to vertical surfaces for an extended period.

Exposure protection and mop-up/overhaul can be completed with **ECOPOL F** for additional and faster fire control and extinguishment.



## EXTINGUISHING PERFORMANCES

### CERTIFICATIONS:

- USDA Forest Service (under 5100-307a specification) QPL listed qualified for all application methods: ground engines, water- scoopers, airtankers (SEATS), fixed-tank helicopters and helicopter buckets

### USE:

- Usable from 0.1% as wetting agent to 1% on Class B fires.
- Applicable on class A wildland fires:
  - Forest fires: scrub, trees...
  - Bushfires...
- Also applicable on contained class B fires
- Efficient with salt water, fresh water, and brackish water at all levels of hardness

- Effective at Low, Medium and High Expansion
- Compatible with long-term fire retardant
- Non-corrosive
- Suitable for use with all dosage systems and discharge firefighting equipments:
  - ground fire suppression system (CAFS, foam proportioner...)
  - water scooper
  - airtanker
  - fixed-tank helicopter
  - helicopter bucket

### THEY CHOSE ECOPOL F:

Fire departments and civil defense are confident using it against wildland fires.

**10-year warranty**



# BIOEX®

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## ECOPOL F

**2.3. Other hazards**

The mixture does not contain substances classified as 'Substances of Very High Concern' (SVHC)  $\geq 0.1\%$  published by the European Chemicals Agency (ECHA) under article 57 of REACH: <http://echa.europa.eu/fr/candidate-list-table>

The mixture fulfils neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.

**SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures****Composition :**

Identification	(EC) 1272/2008	Note	%
PROPRIETARY MIXTURE OF SURFACTANTS	GHS05 Dgr Skin Irrit. 2, H315 Eye Dam. 1, H318		25 $\leq$ x % < 50
INDEX: 603-096-00-8 EC: 203-961-6 2-(2-BUTOXYETHOXY)ETHANOL	GHS07 Wng Eye Irrit. 2, H319	[1]	10 $\leq$ x % < 25

(Full text of H-phrases: see section 16)

**Information on ingredients :**

[1] Substance for which maximum workplace exposure limits are available.

**SECTION 4 : FIRST AID MEASURES**

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

**4.1. Description of first aid measures****In the event of splashes or contact with eyes :**

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

Regardless of the initial state, refer the patient to an ophthalmologist and show him the label.

**In the event of splashes or contact with skin :**

Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognised cleaner.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

**In the event of swallowing :**

Do not give the patient anything orally.

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Seek medical attention immediately, showing the label.

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

No data available.

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

No data available.

**SECTION 5 : FIREFIGHTING MEASURES**

Non-flammable.

**5.1. Extinguishing media**

Firefighting foam concentrate not flammable

**5.2. Special hazards arising from the substance or mixture**

No data available.

## ECOPOL F

**5.3. Advice for firefighters**

No data available.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES****6.1. Personal precautions, protective equipment and emergency procedures**

Consult the safety measures listed under headings 7 and 8.

**6.2. Environmental precautions**

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

**6.3. Methods and material for containment and cleaning up**

If the ground is contaminated, once the product has been recovered by sponging with an inert and non-combustible absorbent material, wash the contaminated area in plenty of water.

**6.4. Reference to other sections**

No data available.

**SECTION 7 : HANDLING AND STORAGE**

Requirements relating to storage premises apply to all facilities where the mixture is handled.

**7.1. Precautions for safe handling**

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

**Recommended equipment and procedures :**

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid eye contact with this mixture at all times.

**7.2. Conditions for safe storage, including any incompatibilities**

No data available.

**Packaging**

Always keep in packaging made of an identical material to the original.

Recommended types of packaging :

Product in bulk : stainless steel, polyester or mild steel protected with epoxy or polyurethane coating. Tanks in PE, PP

Unsuitable packaging materials :

Mild steel

**7.3. Specific end use(s)**

No data available.

**SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters****Occupational exposure limits :**

- European Union (2019/1831, 2017/2398, 2017/164, 2009/161, 2006/15/CE, 2000/39/CE, 98/24/CE) :

CAS	VME-mg/m <sup>3</sup>	VME-ppm	VLE-mg/m <sup>3</sup>	VLE-ppm	Notes
112-34-5	67.5	10	101.2	15	-

- Germany - AGW (BAuA - TRGS 900, 08/08/2019) :

CAS	VME :	VME :	Excess	Notes
112-34-5		10 ppm 67 mg/m <sup>3</sup>		1.5 (I)

- France (INRS - ED984 / 2019-1487) :

CAS	VME-ppm	VME-mg/m <sup>3</sup>	VLE-ppm	VLE-mg/m <sup>3</sup>	Notes	TMP No
112-34-5	10	67.5	15	101.2	-	-

- UK / WEL (Workplace exposure limits, EH40/2005, 2011) :

## ECOPOL F

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
112-34-5	10 ppm 67.5 mg/m <sup>3</sup>	15 ppm 101.2 mg/m <sup>3</sup>			

**8.2. Exposure controls****Personal protection measures, such as personal protective equipment**

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

**- Eye / face protection**

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles with protective sides accordance with standard EN166.

**- Hand protection**

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Recommended properties :

- Impervious gloves in accordance with standard EN ISO 374-2

**- Body protection**

Avoid skin contact.

Wear suitable protective clothing.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES****9.1. Information on basic physical and chemical properties****General information :**

Physical state : Fluid liquid.

**Important health, safety and environmental information**

pH : Not stated.

Neutral.

Boiling point/boiling range : Not specified.

Flash point interval : Not relevant.

Vapour pressure (50°C) : Not relevant.

Density : > 1

Water solubility : Soluble.

Melting point/melting range : Not specified.

Self-ignition temperature : Not specified.

Decomposition point/decomposition range : Not specified.

**9.2. Other information**

No data available.

**SECTION 10 : STABILITY AND REACTIVITY****10.1. Reactivity**

No data available.

**10.2. Chemical stability**

This mixture is stable under the recommended handling and storage conditions in section 7.

## ECOPOL F

**10.3. Possibility of hazardous reactions**

No data available.

**10.4. Conditions to avoid**

No data available.

**10.5. Incompatible materials**

No data available.

**10.6. Hazardous decomposition products**

No data available.

**SECTION 11 : TOXICOLOGICAL INFORMATION****11.1. Information on toxicological effects**

May cause irreversible damage to the skin; namely inflammation of the skin or the formation of erythema and eschar or oedema following exposure up to four hours.

May have irreversible effects on the eyes, such as tissue damage in the eye, or serious physical decay of sight, which is not fully reversible by the end of observation at 21 days.

Serious eye damage is typified by the destruction of cornea, persistent corneal opacity and iritis.

**11.1.1. Substances**

No toxicological data available for the substances.

**11.1.2. Mixture**

No toxicological data available for the mixture.

**SECTION 12 : ECOLOGICAL INFORMATION****12.1. Toxicity****12.1.2. Mixtures**

No aquatic toxicity data available for the mixture.

**12.2. Persistence and degradability****12.2.2. Mixtures**

easily biodegradable

**12.3. Bioaccumulative potential**

No data available.

**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**

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

**13.1. Waste treatment methods**

Do not pour into drains or waterways.

**Waste :**

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

**Soiled packaging :**

Empty container completely. Keep label(s) on container.

Give to a certified disposal contractor.



## ECOPOL F

**SECTION 14 : TRANSPORT INFORMATION**

Exempt from transport classification and labelling.

**14.1. UN number**

-

**14.2. UN proper shipping name**

-

**14.3. Transport hazard class(es)**

-

**14.4. Packing group**

-

**14.5. Environmental hazards**

-

**14.6. Special precautions for user**

-

**SECTION 15 : REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****- Classification and labelling information included in section 2:**

The following regulations have been used:

- EU Regulation No. 1272/2008 amended by EU Regulation No. 2017/776 (ATP 10)

**- Container information:**

No data available.

**- Particular provisions :**

No data available.

**15.2. Chemical safety assessment**

No data available.

**SECTION 16 : OTHER INFORMATION**

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

**Wording of the phrases mentioned in section 3 :**

H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

**Abbreviations :**

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).

GHS05 : Corrosion

PBT: Persistent, bioaccumulable and toxic.

vPvB : Very persistent, very bioaccumulable.

SVHC : Substances of very high concern.