

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

1.1. Product identifier

Product form : Mixture
Product name : EKOSPRAY HFO
Product code : 20004357

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

1.2.1. Relevant identified uses

Industrial/Professional use spec : Industrial
Use of the substance/mixture : Polyurethane

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Bang & Bonsomer Group Oy
Itälahdenkatu 18 A
P.O. Box 93
00211 Helsinki - Finland
T +3589681081
REACH@bangbonsomer.com - <http://www.bangbonsomer.com>

1.4. Emergency telephone number

Country	Official advisory body	Address	Emergency number	Comment
Finland	Myrkytystietokeskus	Stenbäckinkatu 9 PO BOX 100 29 Helsinki	+358 9 471 977 +358 9 4711	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Acute Tox. 4 (Oral) H302
Skin Irrit. 2 H315
Eye Dam. 1 H318
Skin Sens. 1 H317
Aquatic Chronic 2 H411

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

GHS07

GHS09

Signal word (CLP) :

Danger

Contains :

2,6-Bis (diethanolaminomethyl) -4-nonylphenol

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Hazard statements (CLP)

: H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P264 - Wash hands, forearms and face thoroughly after handling.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P273 - Avoid release to the environment.
P280 - Wear protective clothing, eye protection, face protection.
P301+P312 - IF SWALLOWED: Call a POISON CENTER, doctor if you feel unwell.
P302+P352 - IF ON SKIN: Wash with plenty of soap and 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.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Chlorotrifluoropropene	(CAS-No.) 102687-65-0 (REACH-no) 01-2119855084-38	10 – 25	Aquatic Chronic 3, H412
2,6-Bis (diethanolaminomethyl) -4-nonylphenol	(CAS-No.) 20073-51-2	10 – 25	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 1, H410
Triethylphosphate	(CAS-No.) 78-40-0 (EC Index-No.) 201-114-5 (REACH-no) 01-2119492852-28	5 – 10	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319
Tris(2-chloro-1-methylethyl)phosphate	(CAS-No.) 13674-84-5 (EC-No.) 237-158-7 (REACH-no) 01-2119486772-26	1 – 5	Acute Tox. 4 (Oral), H302
Halogenated polyetherpolyol	(CAS-No.) 68441-62-3	1 – 5	Acute Tox. 4 (Oral), H302
diethylmethylbenzenediamine	(CAS-No.) 68479-98-1 (EC-No.) 270-877-4 (EC Index-No.) 612-130-00-0 (REACH-no) 01-2119486805-25	1 – 5	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Oral), H302 STOT RE 2, H373 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
N,N-Dimethylcyclohexylamine	(CAS-No.) 98-94-2 (EC-No.) 202-715-5 (REACH-no) 01-2119533030-60	< 1	Flam. Liq. 3, H226 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Skin Corr. 1B, H314 Aquatic Chronic 2, H411

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Dibutylbis(dodecylthio)stannan	(CAS-No.) 1185-81-5 (EC Index-No.) 214-688-7	< 1	Acute Tox. 4 (Dermal), H312 Skin Irrit. 2, H315 Skin Sens. 1, H317 Muta. 2, H341 Repr. 1B, H360 STOT RE 2, H373 Aquatic Chronic 1, H410
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Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Show this safety data sheet to the doctor in attendance.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell. Rinse mouth out with water. Drink plenty of water. Do NOT induce vomiting.

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

Symptoms/effects after skin contact	: Causes skin irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Harmful if swallowed.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide. Use extinguishing agent suitable for surrounding fire.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products in case of fire:	: Toxic fumes may be released. Carbon monoxide. Carbon dioxide. Nitrogen oxides. Polonium (Po). Silicon oxides. Hydrogen halides (HX).

5.3. Advice for firefighters

Precautionary measures fire	: Stop leak if safe to do so. Evacuate area. Cool down the containers exposed to heat with a water spray.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
Other information	: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Evacuate area. No flames, no sparks. Eliminate all sources of ignition. Avoid contact with skin and eyes. Stop leak if safe to do so. Avoid breathing dust, mist or spray.
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6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Do not allow into drains or water courses.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid formation of vapours. Handle and open container with care. Handle empty containers with care because residual vapours are flammable. Vapours are heavier than air and may spread along floors. Vapours may form flammable mixture with air. Product may become electrostatically charged - provide earthing of containers, equipment, pumps and ventilation facilities. Take precautionary measures against static discharge.

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Hygroscopic product. Keep container tightly closed. Keep only in original container. Keep away from food, drink and animal feedingstuffs.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station. Do not breathe dust. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapours. Do not eat, drink or smoke in areas where product is used. Wash hands before breaks and after work. Take off contaminated clothing.

Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Combined gas/dust mask with filter type P3.

Materials for protective clothing:

Wear suitable protective clothing

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Hand protection:

Protective gloves. Standard EN 374 - Protective gloves against chemicals.

Eye protection:

Standard EN 166 - Personal eye-protection. Safety glasses with face shield. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Gold. brown.
Odour	: characteristic.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < 0 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: > 65 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: partly soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with isocyanates.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with isocyanates.

10.4. Conditions to avoid

Avoid static electricity discharges. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5. Incompatible materials

galvanized surfaces. ferrous metal. Base metals and alloys.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides. Polonium (Po). Hydrogen. Silicon oxides. Hydrogen halides (HX).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

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ATE CLP (oral)	500 mg/kg bodyweight
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Tris(2-chloro-1-methylethyl)phosphate (13674-84-5)

LD50 oral rat	1500 mg/kg NLM_CIP
LD50 dermal rabbit	> 5000 mg/kg IUCLID
LC50 inhalation rat (mg/l)	> 4.6 mg/l 4 h, OECD_SIDS

Triethylphosphate (78-40-0)

LD50 oral rat	1100 – 1600 mg/kg
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N,N-Dimethylcyclohexylamine (98-94-2)

LD50 oral rat	272 mg/kg NLM_CIP
LC50 inhalation rat (mg/l)	1889 mg/m ³ 2 h, NLM_CIP

diethylmethylbenzenediamine (68479-98-1)

LD50 oral rat	738 mg/kg
LD50 dermal rabbit	1100 mg/kg
LC50 inhalation rat (Vapours - mg/l/4h)	≥ 50 mg/l/4h

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : May cause an allergic skin reaction.

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Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Toxic to aquatic life with long lasting effects.

Tris(2-chloro-1-methylethyl)phosphate (13674-84-5)

LC50 fish 1	56.2 mg/l Brachydanio rerio
LC50 fish 2	98 mg/l Pimephales promelas
EC50 Daphnia 1	63 mg/l IUCLID
EC50 72h algae (1)	45 mg/l Desmodesmus subspicatus, IUCLID
EC50 96h algae (1)	4 mg/l Pseudokirchneriella subcapitata, IUCLID

diethylmethylbenzenediamine (68479-98-1)

LC50 fish 1	200 mg/l
EC50 Daphnia 1	0.5 mg/l
EC50 other aquatic organisms 1	> 170 mg/l micro-organisms

12.2. Persistence and degradability

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Persistence and degradability	Not readily biodegradable.
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12.3. Bioaccumulative potential

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Bioaccumulative potential	May accumulate in organisms.
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12.4. Mobility in soil

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Ecology - soil	partly soluble.
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12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects	: May cause pH changes in aqueous ecological systems. Do not contaminate ground and surface water. Avoid discharge to the environment. The product contains organic halogens.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
UN 3082	UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name			
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol)	Environmentally hazardous substance, liquid, n.o.s. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol)
Transport document description			
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2,6-Bis (diethanolaminomethyl) -4-nonylphenol), 9, III
14.3. Transport hazard class(es)			
9	9	9	9
			
14.4. Packing group			
III	III	III	III
14.5. Environmental hazards			
Dangerous for the environment : Yes	Dangerous for the environment : Yes Marine pollutant : Yes	Dangerous for the environment : Yes	Dangerous for the environment : Yes
No supplementary information available			

14.6. Special precautions for user

Overland transport

Classification code (ADR)	: M6
Special provisions (ADR)	: 274, 335, 375, 601
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1
Packing instructions (ADR)	: P001, IBC03, LP01, R001
Special packing provisions (ADR)	: PP1
Mixed packing provisions (ADR)	: MP19
Transport category (ADR)	: 3

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Special provisions for carriage - Packages (ADR) : V12
Special provisions for carriage - Loading, unloading
and handling (ADR) : CV13
Hazard identification number (Kemler No.) : 90
Orange plates :



Tunnel restriction code (ADR) : -

Transport by sea

Special provisions (IMDG) : 274, 335, 969
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : LP01, P001
Special packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1, TP29
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A

Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y964
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 964
PCA max net quantity (IATA) : 450L
CAO packing instructions (IATA) : 964
CAO max net quantity (IATA) : 450L
Special provisions (IATA) : A97, A158, A197
ERG code (IATA) : 9L

Rail transport

Classification code (RID) : M6
Special provisions (RID) : 274, 335, 375, 601
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Special packing provisions (RID) : PP1
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1, TP29
Tank codes for RID tanks (RID) : LGBV
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W12
Special provisions for carriage - Loading, unloading
and handling (RID) : CW13, CW31
Colis express (express parcels) (RID) : CE8
Hazard identification number (RID) : 90

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list
Contains no REACH Annex XIV substances

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Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Other information : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.

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H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

SDS EU (REACH Annex II)

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