Safety Data Sheet

According to Regulation (EC) No. 1907/2006 annex II and EC/2020/878

FK-5-1-12 pressurized with Nitrogen.

Date of issue: 2025-08-28 Version 1

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

1.1 Product identifier	FK-5-1-12 pressurized with Nitrogen.
UFI	-
1.2 Relevant identified uses of the substance or mixture and uses advised against	Fire Extinguishing Agents Industrial Use
1.3 Details of the supplier of the safety data sheet	Spiromec AB Molijns väg 11 589 41 Linköping
Telephone	+ 46 (0)13-36 26 60
Homepage/E-mail	spiromec@spiromec.se
Emergency telephone	For poison information call, NHS 111 (England), NHS 24 (Scotland) or NHS Direct (Wales), in emergencies call 999.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:
Classification CLP (1272/2008/EC)
Press. Gas (Comp.); H280
Hazardous to the aquatic environment - Chronic Hazard, Category 3:H412
2.2 Label elements:
Pictogram

Signal Word
Warning

Containing substances
Nitrogen
Hazard statement Code(s)
H280 Contains gas under pressure; may explode if heated.
H412: Harmful to aquatic life with long lasting effects
Precautionary statements
P273 Avoid release to the environment.
P410 + P403 Protect from sunlight. Store in a well-ventilated place
2.3 Other hazards
The product is not considered to contain substances that meet the criteria for classification as PBT or vPvB substances in concentrations ≥ 0.1%
Does not contain an endocrine disruptor (EDC) in a concentration of ≥ 0.1%.
High concentrations can displace the normal air and cause suffocation from lack of oxygen.

SECTION 3: Composition/information on ingredients

3.2 Mixture

Components	CAS-No EC-No Reg-No	Conc. %	Hazard Class and Category Code(s)	Hazard statement Code(s)*
1,1,1,2,2,4,5,5,5-nonafluor-4-(trifluormetyl)-3-pentanon Index: 606-108-00-X	756-13-8 436-710-6	80-99	Aquatic Chronic 3	H412
Nitrogen	7727-37-9 231-783-9	1-20	Press. Gas.	H280

* The full text of Hazard statement Codes are listed under section 16.
Ingredients not listed are classified as non-hazardous or at a concentration below reportable levels.
The classification is based on information from the chemical supplier and http://echa.europa.eu (Databases)

SECTION 4: First aid measures

4.1 Description of first aid measures:

General Information

In all cases of doubt, or when symptoms persist, seek medical advice.

Inhalation

Fresh air. Contact a doctor if the complaints persist.

Skin contact

Warm the affected body part in lukewarm water if frostbite has occurred. DO NOT use hot water.
Frostbite should be treated by a doctor.

Eye contact

Rinse with lukewarm water for several minutes. Hold eyelids apart. Remove contact lenses, if present and easy to do. Contact a doctor if the complaints persist.

Ingestion

Rinse mouth and immediately give plenty of water or milk to drink. Seek medical advice.

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

Inhalation:	High concentrations can displace the normal air and cause suffocation from lack of oxygen.
Skin contact:	Contact with rapidly expanding gas may cause frostbite.
Eye contact:	May be slightly irritating to eyes. (Pain, redness) frostbite
Ingestion:	Ingestion may cause discomfort and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media
The product is not flammable. The product is an extinguishing agent.

5.2 Special hazards arising from the substance or mixture
Containers may burst or explode when heated, due to rapid pressure build-up.
Do not breathe fumes. During fire, gases hazardous to health may be formed. (Hydrogen fluoride)

5.3 Advice for firefighters
Appropriate breathing apparatus and protective suites may be required.

Additional information
Cool endangered containers with water in case of fire. Move containers from fire area if it can be done without risk.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes.
Ensure good ventilation.
Use breathing apparatus when oxygen levels are low or unknown.
Keep unauthorized and unprotected people at a safe distance.

6.2 Environmental precautions
Should be prevented from entering sewer systems, basements and pits, or other places where gas accumulation could be dangerous.

6.3 Methods and material for containment and cleaning up
Evacuate the area and ventilate the gas. Let the gas from the leaking gas cylinders evaporate outdoors.

6.4 Reference to other sections
For handling and storage, see section 7.
For personal protection, see section 8.
Collected waste is placed in closed metal containers and disposed of as waste according to section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Normal precautions taken when handling chemicals should be observed.
Use only with compatible and approved equipment.
Only experienced and properly instructed people may handle compressed gas.
Pressure container: must not be punctured or burned, even when empty. Protect from sunlight. Must not be exposed to temperatures exceeding 50 °C.
Use recommended safety equipment
Do not eat, drink or smoke in areas where this product is handled.
Protect gas cylinders from physical damage; you must not pull, roll, slip or overturn gas cylinder.

7.2 Conditions for safe storage, including any incompatibilities
The product should be stored in a manner which prevents hazards to health and the environment.
Containers should be stored in the vertical position and properly secured to prevent them from falling over.
Store in a dry and well-ventilated space.

7.3 Specific end use(s)
-

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Appropriate engineering controls

Provide adequate ventilation.

Exposure limits

Swedish limit values or limit values according to the European commission:

None established

British limit values (EH40/2005 Workplace exposure limits)

None established

DNEL

Long-term exposure – Workers Systemic effects, Inhalation: 83.4 mg/m^3 Long-term effects – Workers Systemic effects, Dermal: 11.8 mg/kg

PNEC

Freshwater	6,4-678 µg/l
Periodic discharges	67,8 µg/l
Saltwater	640-678 ng/l
Water treatment plants	1 mg/l
Freshwater sediments	23 – 2 670 µg/kg
Saltwater sediments	2,3 – 2677 µg/kg
Air pollution	200 ng/m^3

8.2 Exposure controls:

General protective and hygiene measures

Wash hands before breaks and at the end of work.
Handle in accordance with good industrial hygiene and safety practice.
Escaping gas can cause severe cold.

Individual protection measures, such as personal protective equipment:

Always consult a competent person/supplier when selecting personal protective equipment.

Respiratory protection

Oxygen monitors should be used since suffocating gases may be released.

Hand protection

Use protective gloves that meet the standard EN374
Gloves that protect against cold are recommended.
When selecting gloves, several parameters should be taken into account, use, handling, breakthrough time.

Eye protection

Wear tightly fitting protective goggles if there is a risk of contact with eyes.

Clothing requirements

Normally not needed

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state:	Liquid under pressure, Gas
Colour:	Colourless
Odour	Odourless
Melting point/freezing point (°C):	108
Boiling point or initial boiling point and boiling range	49
Flammability	Not determined
Lower and upper explosion limit	Not determined
Flash point (°C):	Not determined
Auto-ignition temperature	Not determined
Decomposition temperature	Not determined
pH	Not determined
Kinematic viscosity	0,6 mPas @ 25°C
Solubility	20 mg/l i vatten
Partition coefficient n-octanol/water (log value)	Not determined
Vapour pressure	40.4 kPa @ 25°C
Density and/or relative density	11,6
Relative vapour density	1,6 @20°C
Particle characteristics	Not determined

9.2 Other information: No specific.

SECTION 10: Stability and reactivity

10.1 Reactivity
Stable under recommended storage and handing conditions.
10.2 Chemical stability
The product is stable.
10.3 Possibility of hazardous reactions
No known.
10.4 Conditions to avoid
Protect from moisture.
10.5 Incompatible materials
Alcohols, amines, and strong bases.
10.6 Hazardous decomposition products
Hydrofluoric acid - At high temperatures - Extreme heating conditions.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

See section 4. (Most important symptoms and effects, both acute and delayed)

Irritating/corrosive properties

Not classified as irritating/corrosive according to CLP.

Acute toxicity

Not classified as acutely toxic according to CLP.

Toxicology data

LD_{50} Oral 5000 mg/kg
LC_{50} Inhalation Steam 4h: >1,227 mg/l

Specific organtoxicitet STOT-single exposure -repeated exposure

No known.

Routes of exposure:

Eyes and skin, ingestion, inhalation.

Allergenic potential

The product is not classified as allergenic by inhalation or skin contact.

Carcinogenicity, mutagenicity and toxicity for reproduction

This product is not classified as carcinogen, mutagen or toxic for reproduction.

Aspiration hazard

No

11.2 Information on other hazards

Does not contain an endocrine disruptor (EDC) in a concentration of ≥0.1%.
Risk of frostbite.
Please note that if large quantities are inhaled, there is a risk of suffocation due to lack of oxygen.

SECTION 12: Ecological information

This product is classified as dangerous for the environment. Harmful to aquatic life with long lasting effects
Do not flush into surface water or sanitary sewer system.

12.1 Toxicity

LC_{50} Fish 4d: 1.07 g/l
EC_{50} Daphnia 48h: 1.08 g/l
EC_{50} Algae 4d: 6.78-10.6 mg/l
EC_{50} Aquatic Plants 7d: 17.7 mg/l
NOEC Microorganisms 3h: 3 10 g/l

12.2 Persistence and degradability

Not readily biodegradable

12.3 Bioaccumulative potential

Koc 3 904 L/kg

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

This product is not considered to contain any substances that meet the criteria for classification as PBT or vPvB substances.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of ≥0.1%.

12.7 Other adverse effects

No known.

SECTION 13: Disposal considerations

13.1 Waste treatment methods:
The product
Dispose of in accordance with local authority requirements. Do not empty into drain.
Hazardous waste.
140602*Other halogenated solvents and solvent mixtures
070103*Organic halogenated solvents, washing liquids and mother liquors
NITROGEN: 160505: Gases in pressure containers other than those mentioned in 160504*.
Disposal of Packaging
Empty and cleaned packaging can be recycled.

SECTION 14: Transport information

The product is classified as dangerous goods according to ADR/RID, IMDG, IATA-DGR.
14.1 UN number or ID number
1066
14.2 UN proper shipping name
NITROGEN, COMPRESSED
14.3 Transport hazard class(es)
2 (label 2,2)
14.4 Packing group
-
14.5 Environmental hazards
Marine Pollutant: No
14.6 Special precautions for user
-
14.7 Maritime transport in bulk according to IMO instruments
-
Tunnelcategory:
(E)
LQ
120 ml

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
Classification according to Regulation (EC) No. 1907/2006 annex II and EC/2020/878. EH40/2005.
(EU) REACH Annex XVII
None listed.
(EU) Candidate List of substances of very high concern
None listed.
(EU) REACH Annex XIV
None listed.
15.2 Chemical safety assessment
For this product a chemical safety assessment was not carried out.

SECTION 16: Other information

The full text of Hazard statement Codes listed under section 3

H280 Contains gas under pressure; may explode if heated
H412: Harmful to aquatic life with long lasting effects

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Safety data sheet according to Regulation (EC) No. 1907/2006 annex II and EC/2020/878.

Sources

Safety data sheet provided by the manufacturer.
CLP-regulation, www.kemi.se, EH40/2005. www.echa.europa.eu (Databases)

Explanation of abbreviations

BCF: Bio Concentration Factor.
CAS-nr: Chemical Abstracts Service number
EC_{50}: Effect Concentration
IMDG: International Maritime Dangerous Goods Code.
LC_{50}: Lethal Concentration
LD_{50}: Lethal Dose
NOEC: No Observed Effect Concentration
PBT- substances: Persistent, Bio accumulative and Toxic substances.
vPvB- substances: Very persistent and Very Bio accumulative substances.