



Safety data sheet
according to 1907/2006/EC, Article 31

Printing date: 11.11.2010

Version: 1

Revision: 11.11.2010

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

- **Product identifier**
- **Trade name:** **403A - aerosol Super Cold 134 Plus**
- **CAS Number:**
811-97-2
- **EINECS Number:**
212-377-0
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** For locating thermal intermittents
- **Details of the supplier of the safety data sheet**
- **Supplier/Manufacturer:**
MG Chemicals
9347 - 193rd Street
Surrey, B.C., Canada
V4N 4E7

1-800-201-8822 - 0
1-604-888-3084 - 0
- **Distributor:**
Solid State Supplies Ltd.
Eastlands Lane
Paddock Wood
Kent, TN12 6BU
United Kingdom
Telephone: +44 (0) 1892 836836

www.ssspic.com
- **Email competent person:** sonja.fischer@kft.de
- **Information department:**
Technical Support: Phone 1-604-888-3084 - 128
For updates on this SDS please download from www.mgchemicals.com
- **Emergency telephone number:**
National Poisons Information Centre Telephone: 0870 6006266 (UK only)
Telephone: +44 (0)191 230 5460

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008** The substance is not classified according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** not applicable
- **Information concerning particular hazards for human and environment:**
Warning! Pressurized container.
May form ignitable mixtures with air and/or oxygen.
Product vapours may displace air and cause asphyxiation in confined spaces.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard-determining components of labelling:** Void
- **Hazard statements**
Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.

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- **Precautionary statements**
 - P235 Keep cool.
 - P233 Keep container tightly closed.
 - P271 Use only outdoors or in a well-ventilated area.
 - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
 - **Other hazards**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.
-

3 Composition/information on ingredients

- **Chemical characterization: Substances**
 - **CAS No. Description:**
811-97-2 1,1,1,2-tetrafluoroethane
 - **Identification number(s):**
 - **EINECS Number:** 212-377-0
-

4 First aid measures

- **Description of first aid measures**
 - **General information:** In case of irregular breathing or respiratory arrest provide artificial respiration.
 - **After inhalation:**
Remove victim from contaminated area. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a doctor.
 - **After skin contact:**
In cases of frost bites, rinse with plenty of water. Do not remove clothing.
Wash with water and soap.
If symptoms persist, consult a doctor.
 - **After eye contact:**
By direct contact with gas escaping from compressed gas cylinders frostbites are possible.
Bath eye with lukewarm water.
Call a doctor immediately.
 - **After swallowing:** In this form most unlikely.
 - **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed**
After inhalation of high concentrations:
Dizziness
Rapid pulse
After skin contact:
Frost bites
Troubles of sensation
 - **Indication of any immediate medical attention and special treatment needed** Symptomatic treatment
-

5 Firefighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Direct jet water
- **Special hazards arising from the substance or mixture**
Vapours are heavier than air
Dangerous decomposition products see chapter 10: stability and reactivity

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- **Advice for firefighters**

- **Protective equipment:**

Do not inhale combustion vapours.
Wear self-contained respiratory protective device.

- **Additional information:**

When heated above its flash point, this material will release flammable vapors which can burn or be explosive in confined spaces.

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Do not smoke - keep ignition sources away
Ensure adequate ventilation.
Use respiratory protective device against the effects of fumes/dust/aerosol.
Avoid contact with eyes and skin.



Wear protective equipment. Keep unprotected persons away.

- **Environmental precautions:**

Do not allow product to reach sewage system or any water course.
Do not allow to penetrate the ground/soil.

- **Methods and material for containment and cleaning up:**

Ensure adequate ventilation.
Allow to evaporate.

- **Reference to other sections**

See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

Avoid contact with eyes and skin.
Avoid inhalation of vapours.

- **Information about protection against explosions and fires:**

Do not spray on flames or any incandescent material.



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.
Observe the general rules of industrial fire protection.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Store cool and dry in a well ventilated area.
Observe official regulations on storing packagings with pressurized containers.

- **Information about storage in one common storage facility:**

Store away from foodstuffs.

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Store away from feed.

- **Further information about storage conditions:**

Keep receptacle tightly sealed.

Do not seal receptacle gas-tight.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

- **Storage class:** 2B pressurized gas containers

- **Specific end use(s)** Do not inhale fumes/aerosol.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:**

Install appropriate mechanical ventilation.

No further data; see item 7.

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

811-97-2 1,1,1,2-tetrafluorethane
WEL (Great Britain) Long-term value: 4240 mg/m³, 1000 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Exposure controls**

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

Use skin protection cream for skin protection.

- **Breathing equipment:**



In case of brief exposure or low pollution use a respiratory filter device. In case of intensive or longer exposure use a respiratory protective device that is independent of circulating air.

- **Protection of hands:**

Protective gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves:**

Leather gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material:**

The exact penetration time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:** Tightly sealed goggles.

- **Body protection:** Protective work clothing.

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information:**

- **Appearance:**

Form:

Aerosol

Colour:

Clear

- **Odour:**

Ether-like

- **Odour threshold:**

Not determined.

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· pH-value:	Not determined.
· Change in condition:	
Melting point/Melting range:	not determined
Boiling point/Boiling range:	-26.2°C
· Flash point:	Not applicable, as aerosol
· Flammability (solid, gaseous):	
Heat of Combustion:	4,2 kJ/g
· Ignition temperature:	> 750°C
· Decomposition temperature:	Not determined.
· Self ignition temperature:	Not determined.
· Danger of explosion:	Aerosol. Pressurized container. Do not pierce.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapour pressure at 21°C:	86 PSI
· Density:	1.22 g/cm ³
· Relative density:	Not determined.
· Vapour density:	Not determined.
· Evaporation rate:	Not applicable.
· Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix
· Segregation coefficient (n-octanol/water):	1,680
· Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
Avoid temperatures >50°C.
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions** Reacts with oxygen.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:**
Alkali metals
Alkaline-earth metals
Aluminium powder
Zinc powder
Magnesium
Beryllium powder
- **Hazardous decomposition products:**
In case of fire or at high temperatures the formation of following decomposition products is possible.
Hydrogen fluoride
carbonyl halides
Irritant gases/vapours

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Poisonous gases/vapours

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11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
 - Inhalative LC₅₀/4h 48000 ppm (rat)
 - 1500000 mg/m³ (rat)
- **Primary irritant effect:**
- **on the skin:** Irritations - frostbites depending on the time of exposition.
- **on the eye:** Tissue damage because of frostbite is possible.
- **Sensitization:** No sensitizing effects known.
- **Subacute to chronic toxicity:**
 - Prolonged exposure may cause CNS depression.
 - Functional disorder of the cardiovascular system

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** The product is insoluble in water; therefore it is not dangerous to water organisms if applied appropriately.
- **Persistence and degradability** No further relevant information available.
- **Other information:** The product has not been tested.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
 - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous to water.
 - According to appendix 3 of VwVwS dated 27.7.2005 (German regulation)
 - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
 - Danger to drinking water is possible if large quantities leak into the ground or into water course.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
 - Disposal according to instructions of local authorities.



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

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14 Transport information

· Land transport ADR/RID (cross-border)



- **ADR/RID class:** 2 5A Gases.
- **UN-Number:** 1950
- **Label:** 2.2
- **UN proper shipping name:** 1950 AEROSOLS
- **Limited quantities (LQ):** LQ2
- **Transport category:** 3
- **Tunnel restriction code:** E
- **Remarks:** Limited Quantity: 1 l inner packing, 30 l packing unit

· Maritime transport IMDG:



- **IMDG Class:** 2
- **UN Number:** 1950
- **Label:** 2.2
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **Proper shipping name:** AEROSOLS

· Air transport ICAO-TI and IATA-DGR:



- **ICAO/IATA Class:** 2
- **UN/ID Number:** 1950
- **Label:** 2.2
- **Proper shipping name:** AEROSOLS
- **Remarks:** Packing Instructions:
For Limited Quantities: Y203(Max Net Qty/Pkg: 30 kg G)
Passenger and Cargo Aircraft: 203 (Max Net Qty/Pkg: 75 kg)
Cargo Aircraft only: 203 (Max Net Qty/Pkg: 150 kg)
- **UN "Model Regulation":** UN1950, DRUCKGASPACKUNGEN, 2.1
- **Special precautions for user** Warning: Gases.
- **Transport/Additional information:** Protect from heat!
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Water hazard class:**
Water hazard class 1 (Self-assessment): slightly hazardous for water.
According to appendix 3 of VwVwS dated 27.7.2005 (German regulation)

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Ident number:

2350

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:**

KFT Chemieservice GmbH
Im Leuschnerpark. 3 D-64347 Griesheim
Postfach 1451 D-64345 Griesheim

Phone: +49 6155 86829-0 Fax: +49 6155 86829-25

Safety Data Sheet Service: +49 6155 86829-22

- **Contact:** Dr. Sonja Fischer

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- **Sources:**

MSDS of the supplier

Information provided by the manufacturer
