

## Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 25.11.2009

Revision: 25.11.2009

### 1 Identification of substance/preparation and of the company/undertaking:

**Product details:**

- Trade name: **409B Electrosolve Contact Cleaner**
- Application of the substance / the preparation Cleaner for electronics

**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.sssp.com

- Email competent person: sonja.fischer@kft.de

**Information department:**

See supplier/manufacturer  
Technical Support: Phone 1-604-888-3084 - 128  
For updates on this SDS please download from [www.mgchemicals.com](http://www.mgchemicals.com)

- Emergency information: National Poisons Information Centre Tel.: +44 (0)870 6006266

### 2 Hazards identification

**Hazard description:**

Xi Irritant  
F Highly flammable  
N Dangerous for the environment

**Information pertaining to particular dangers for man and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EC" in the latest valid version.

Warning! Pressurized container.

Has a narcotizing effect.

R 11 Highly flammable.

R 38 Irritating to skin.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 67 Vapours may cause drowsiness and dizziness.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

100.0 % by mass of the contents are flammable

**Classification system:**

The classification was made according to the latest editions of the EC-lists, and expanded using company data and specialized literature.

**GHS label elements**

H222 - Extremely flammable aerosol.

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**Warning**

H315 - Causes skin irritation.  
 H336 - May cause drowsiness or dizziness.



H411 - Toxic to aquatic life with long lasting effects.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.

100.0 % by mass of the contents are flammable

• **General:** P102 Keep out of reach of children.

• **Prevention:**

P251 Pressurized container: Do not pierce or burn, even after use.

P273 Avoid release to the environment.

P271 Use only outdoors or in a well-ventilated area.

P261 Avoid breathing spray.

• **Response:**

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

• **Disposal:**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3 Composition/information on ingredients

• **Chemical characterization**

• **Description:** Mixture of the substances listed below with nonhazardous additions.

• **Dangerous components:**

CAS: 107-83-5	2-methylpentane	28-38%
EINECS: 203-523-4	Xn, Xi, F, N; R 11-38-51/53-65-67	
Index number: 601-007-00-7	Danger: flame 2.6/2; health hazard 3.10/1 Warning: exclamation mark 3.2/2, 3.8/3 environment 4.1.C/2	
CAS: 811-97-2	1,1,1,2-tetrafluorethane	20-30%
EINECS: 212-377-0	F+; R 12 Danger: flame 2.6/1	
CAS: 96-14-0	3-methylpentane	11-14%
EINECS: 202-481-4	Xn, Xi, F, N; R 11-38-51/53-65-67	
Index number: 601-007-00-7	Danger: flame 2.6/2; health hazard 3.10/1 Warning: exclamation mark 3.2/2, 3.8/3 environment 4.1.C/2	
CAS: 79-29-8	2,3-dimethylbutane	11-14%
EINECS: 201-193-6	Xn, Xi, F, N; R 11-38-51/53-65-67	
Index number: 601-007-00-7	Danger: flame 2.6/2; health hazard 3.10/1 Warning: exclamation mark 3.2/2, 3.8/3 environment 4.1.C/2	

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CAS: 75-83-2	2,2-dimethylbutane	8-11%
EINECS: 200-906-8	Xn, Xi, F, N; R 11-38-51/53-65-67	
Index number: 601-007-00-7	Danger: health hazard 3.10/1	
	Warning: exclamation mark 3.2/2, 3.8/3	
	environment 4.1.C/2	

CAS: 110-54-3	n-hexane	2.25-2.5%
EINECS: 203-777-6	Repr. Cat. 3; Xn, Xi, F, N; R 11-38-48/20-62-51/53-65-67	
Index number: 601-037-00-0	Danger: flame 2.6/2; health hazard 3.10/1, 3.7/2, 3.9/2	
	Warning: exclamation mark 3.2/2, 3.8/3	
	environment 4.1.C/2	

· **Additional information** For the wording of the listed risk phrases refer to section 16.

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### 4 First aid measures

- **General information:** If symptoms persist or in case of doubt seek medical advice.
  - **After inhalation:**  
Supply fresh air.  
Remove victim from contaminated area. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a doctor.
  - **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
  - **After eye contact:**  
Rinse the eyes with open eyelids for 10 - 15 minutes with water. Then consult a doctor or better an eye specialist.
  - **After swallowing:**  
Drink 2-4 glasses of water.  
Do not induce vomiting.  
Never give anything by mouth to a unconscious person.  
If vomiting occurs spontaneously:  
Hold the head of the casualty low with the body in a prone position in order to avoid aspiration.  
Seek medical treatment.
  - **Information for doctor:**
  - **The following symptoms may occur:**  
After inhalation of aerosols or aspiration:  
irritant effect on the respiratory tract  
Laboured breathing  
weakness  
Gastrointestinal disorder
  - **Treatment:** Symptomatic treatment
- 

### 5 Fire fighting measures

- **Suitable extinguishing agents:**  
Water jet spray  
Extinguishing powder  
Carbon dioxide (CO<sub>2</sub>)  
Foam  
Use fire fighting measures that suit the environment.
- **For safety reasons unsuitable extinguishing agents:** Direct jet water
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
Vapors are heavier than air  
vapors travel along the ground to a distant ignition source and flash back.  
Dangerous decomposition product see chapter 10: stability and reactivity
- **Protective equipment:**  
Do not inhale explosion gases or combustion gases.

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Wear self-contained respiratory protective device.

- **Additional information:**

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

Collect contaminated fire fighting water separately. It must not enter the sewage system.

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

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## 6 Accidental release measures

- **Person-related safety precautions:**



Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Do not smoke - keep ignition sources away

- **Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to penetrate the ground/soil.

In case of seepage into the ground inform responsible authorities.

- **Measures for cleaning/collecting:**

Ensure adequate ventilation.

Send for recovery or disposal in suitable receptacles.

Absorb with non-combustible material like sand, soil or diatomite.

Dispose contaminated material as waste according to item 13.

- **Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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## 7 Handling and storage

- **Handling**

- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.

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



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material.

- **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.

Pay attention to special rules for the storage of flammable liquids.

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

Store away from foodstuffs.

Store away from feed.

do not store with strong oxidizers

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- Odour:** Mild  
like hydrocarbons
- **Change in condition:**
    - Melting point/Melting range:** not determined
    - Boiling point/Boiling range:** 52°C
  - **Flash point:** -29°C
  - **Flammability (solid, gaseous)**
    - Heat of Combustion:** 36,3 kjoule/g
  - **Self ignition temperature:** Product is not self-igniting.
  - **Danger of explosion:** In use, may form flammable/explosive vapour-air mixture.  
Aerosol.  
Pressurized container.  
Do not pierce.
  - **Vapour pressure at 21°C:** 3240.5 hPa
  - **Density:** 0.8 g/cm<sup>3</sup>
  - **Solubility in / Miscibility with**
    - Water:** Insoluble
  - **pH-value:** 7
- 

### 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
Avoid temperatures >50°C.  
No decomposition if used and stored according to specifications.
  - **Materials to be avoided:**  
Strong oxidants  
Finely divided metals, magnesium and alloys containing more than 2% magnesium.  
Alkali metals  
Sodium  
Potassium  
Barium
  - **Dangerous reactions:** No dangerous reactions known
  - **Dangerous products of decomposition:**  
In the case of fire or at high temperatures the formation of the following decomposition products is possible.  
Carbon monoxide and carbon dioxide  
Hydrogen fluoride
- 

### 11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
  - 811-97-2 1,1,1,2-tetrafluoroethane**  
Inhalative LC<sub>50</sub>/4h 48000 ppm (rat)
  - 110-54-3 n-hexane**  
Oral LD<sub>50</sub> > 5000 mg/kg (rat)  
Dermal LD<sub>50</sub> > 2000 mg/kg (rabbit)  
Inhalative LC<sub>0</sub>/4h > 3367 mg/l (rat)  
LC<sub>50</sub>/4 h 1500 mg/l (rat)
- **Primary irritant effect:**
- **on the skin:**  
Irritant to skin and mucous membranes.

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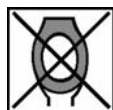

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- Defatting effect on the skin.
  - Continuing or repeated contact with the skin may cause dermatitis.
  - **on the eye:** Light irritation possible
  - **Sensitization:** No sensitizing effects known.
  - **Other information (about experimental toxicology):**
  - **Carcinogenic effects:** Presently there are no information available indicating carcinogenic, mutagenic or teratogenic effects.
  - **Subacute to chronic toxicity:**  
long permanent exposition may cause a slight fibrosis in the lung. Persons with existing respiratory problems (for example asthma, chronic obstructive pulmonary disease) maybe react stronger on the product
  - **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
Irritant  
After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
- 

## 12 Ecological information

- **Ecotoxicological effects:**
- **Aquatic toxicity:** Presently there are no ecotoxicological values available.
- **Remark:** Toxic for fish
- **General notes:**  
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water.  
According to appendix 4 of VwVwS dated 27.7.2005 (German regulation)



Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.  
Also poisonous for fish and plankton in water bodies.  
Toxic for aquatic organisms

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## 13 Disposal considerations

- **Product:**
- **Recommendation:**



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

Disposal according to instructions of local authorities.

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

## 14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 2 5F Gases.
- **Danger code (Kemler):** -

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- **UN-Number:** 1950
- **Packaging group:** -
- **Label:** 2.1
- **Special marking:** Symbol (fish and tree)
- **Description of goods:** 1950 AEROSOLS
- **Limited quantities (LQ)** LQ2
- **Transport category** 2
- **Tunnel restriction code** D
- **Remarks:** Limited Quantity: 1 kg inner packing, 30 kg packaging unit

- **Maritime transport IMDG:**



- **IMDG Class:** 2.1
- **UN Number:** 1950
- **Label:** 2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** Yes  
Symbol (fish and tree)
- **Proper shipping name:** AEROSOLS

- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 2.1
- **UN/ID Number:** 1950
- **Label:** 2.1
- **Packaging group:** -
- **Proper shipping name:** AEROSOLS, flammable
- **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, AEROSOLS, 2.1
- **Environmental hazards:** Product contains environmentally hazardous substances: 2-methylpentane
- **Transport/Additional information:** Protect from heat!

### 15 Regulatory information:

- **Markings according to EC guidelines:**

The product has been classified and marked in accordance with EC Directives / Ordinance on Hazardous Materials

- **Code letter and hazard designation of product:**



Xi Irritant  
F Highly flammable  
N Dangerous for the environment

- **Risk phrases:**

11 Highly flammable.

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- 38 Irritating to skin.
- 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 67 Vapours may cause drowsiness and dizziness.

- **Safety phrases:**

- 2 Keep out of the reach of children.
- 23 Do not breathe aerosol.
- 29/56 Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
- 46 If swallowed, seek medical advice immediately and show this container or label.
- 51 Use only in well-ventilated areas.

- **Special labelling of certain preparations:**

- Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use.
- 100.0 % by mass of the contents are flammable

- **National regulations**

- **Technical guidance (air):**

- **Class Share in %**

- **I**      **2.3**
- **NK**     **9.8**

- **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
- 

### 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.

- **Relevant R-phrases:**

- 11 Highly flammable.
- 12 Extremely flammable.
- 38 Irritating to skin.
- 48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- 62 Possible risk of impaired fertility.
- 65 Harmful: may cause lung damage if swallowed.
- 67 Vapours may cause drowsiness and dizziness.

- **Department issuing MSDS:**

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

Tel.: +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  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent

- **Sources:**

MSDS of the supplier  
 Information provided by the manufacturer

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