



Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

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

· **Product details:**

- **Trade name:** **409B-340G Electrosolve Contact Cleaner**
- **Application of the substance / the preparation:** Cleaner for electronics

· **Manufacturer:**

MG Chemicals
1210 Corporate Drive,
Burlington, Ontario L7L 5R6
CANADA

PHONE: +1 905-331-1396
E-MAIL: support@mgchemicals.com
WEB www.mgchemicals.com
FAX +1 905-340-0772

· **Distributor:**

MG Chemicals UK Limited
DMC, Ensor House, Ensor Way,
New Mills, High Peak, SK22 4NQ,
ENGLAND

PHONE: +44 1663 362888
E-MAIL:
sales@mgchemicals.com

· **Information department:**

E-MAIL (Competent Person): sds@mgchemicals.com

- For hazardous material incidents ONLY—leaks, spills, fires, exposures or accidents
UK: Call CHEMTREC: +(44)-870-8200418 or international: +(1) 703-527-3887

For updates on this SDS please download from www.mgchemicals.com

2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Aerosol 1 H222 Extremely flammable aerosol.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Skin Irrit. 2

H315 Causes skin irritation.

STOT SE 3

H336 May cause drowsiness or dizziness.

- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R38: Irritating to skin.

(Contd. on page 2)

GB

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: **409B-340G Electrosolve Contact Cleaner**

(Contd. of page 1)



F; Highly flammable

R11: Highly flammable.



N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R67: Vapours may cause drowsiness and dizziness.

· **Information concerning particular hazards for human 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.

· **Classification system:**

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

· **Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

· **Hazard pictograms**



GHS02



GHS07



GHS09

· **Signal word** Danger

· **Hazard statements**

H222 Extremely flammable aerosol.

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

Keep out of the reach of children.

· **Precautionary statements**

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 vapours.

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

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

· **Labelling according to EU 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.

38 Irritating to skin.

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

(Contd. on page 3)

GB

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: **409B-340G Electrosolve Contact Cleaner**

(Contd. of page 2)

67 Vapours may cause drowsiness and dizziness.

Safety phrases:

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

Keep out of the reach of children

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 R65;  Xi R38;  F R11;  N R51/53	
Index number: 601-007-00-7	R67	
	 Flam. Liq. 2, H225;  Asp. Tox. 1, H304;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 811-97-2	1,1,1,2-tetrafluoroethane	20-30%
EINECS: 212-377-0	 F+ R12	
	 Flam. Liq. 1, H224	
CAS: 96-14-0	3-methylpentane	11-14%
EINECS: 202-481-4	 Xn R65;  Xi R38;  F R11;  N R51/53	
Index number: 601-007-00-7	R67	
	 Flam. Liq. 2, H225;  Asp. Tox. 1, H304;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 79-29-8	2,3-dimethylbutane	11-14%
EINECS: 201-193-6	 Xn R65;  Xi R38;  F R11;  N R51/53	
Index number: 601-007-00-7	R67	
	 Flam. Liq. 2, H225;  Asp. Tox. 1, H304;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 75-83-2	2,2-dimethylbutane	8-11%
EINECS: 200-906-8	 Xn R65;  Xi R38;  F R11;  N R51/53	
Index number: 601-007-00-7	R67	
	 Flam. Liq. 2, H225;  Asp. Tox. 1, H304;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; STOT SE 3, H336	
CAS: 110-54-3	n-hexane	2.25-2.5%
EINECS: 203-777-6	 Xn R48/20-62-65;  Xi R38;  F R11;  N R51/53	
Index number: 601-037-00-0	R67	
	Repr. Cat. 3	
	 Flam. Liq. 2, H225;  Repr. 2, H361f; STOT RE 2, H373; Asp. Tox. 1, H304;  Aquatic Chronic 2, H411;  Skin Irrit. 2, H315; STOT SE 3, H336	

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

4 First aid measures

General information: If symptoms persist or in case of doubt, seek medical advice.

(Contd. on page 4)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: **409B-340G Electrosolve Contact Cleaner**

(Contd. of page 3)

- **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 (eye specialist).
- **After swallowing:**
Drink 2-4 glasses of water.
Do not induce vomiting.
Never give anything by mouth to an unconscious person.
If vomiting occurs spontaneously:
Hold the head of the vomiting person 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 Firefighting measures

- **Suitable extinguishing agents:**
Water jet spray
Extinguishing powder
Carbon dioxide (CO₂)
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:**
Vapours are heavier than air
Vapours spread on the ground to a distant ignition source and flash back.
Dangerous decomposition products see chapter 10: stability and reactivity
- **Protective equipment:**
Do not inhale explosion gases or combustion gases.
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.

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

(Contd. on page 5)

— GB —

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: 409B-340G Electrosolve Contact Cleaner

(Contd. of page 4)

- **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.
 Make sure to recycle or dispose of 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.

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 flames 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.
 Store away from strong oxidizers.

- **Further information about storage conditions:**

Keep receptacle tightly sealed.
 Store in cool, dry conditions in well sealed receptacles.
 Protect from heat and direct sunlight.

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

8 Exposure controls/personal protection

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

Install appropriate mechanical ventilation.
 No further data; see item 7.

- **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

(Contd. on page 6)

GB

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: 409B-340G Electrosolve Contact Cleaner

(Contd. of page 5)

110-54-3 n-hexaneIOELV (European Union) Long-term value: 72 mg/m³, 20 ppmWEL (Great Britain) Long-term value: 72 mg/m³, 20 ppmOEL (Ireland) Long-term value: 70 mg/m³, 20 ppm

IOELV

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

- **Personal protective equipment:**

- **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Use skin protection cream for skin protection.

Do not inhale gases / fumes / aerosols.

Avoid contact with the eyes and skin.

- **Breathing equipment:**

Not necessary if room is well-ventilated.

In case of unintentional release of substance, exceeding the occupational exposure limit value:

Short term filter device:

Filter AX. (colour coding brown; DIN EN 141)

- **Protection of hands:**

Chemical resistant 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:**

The selection of suitable depends upon the material, and also upon the quality of the gloves. The degree of protection will vary from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **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

- **General Information:**

- **Appearance:**

Form: Aerosol

Colour: According to product specification

- **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.

(Contd. on page 7)

— GB —

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: **409B-340G Electrosolve Contact Cleaner**

(Contd. of page 6)

- **Vapour pressure at 21°C:** 3240.5 hPa
- **Density:** 0.8 g/cm³
- **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 case of fire or at high temperatures the formation of 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-tetrafluorethane
 Inhalative LC₅₀/4h 48000 ppm (rat)

110-54-3 n-hexane
 Oral LD₅₀ > 5000 mg/kg (rat)
 Dermal LD₅₀ > 2000 mg/kg (rabbit)
 Inhalative LC₅₀/4h > 3367 mg/l (rat)
 LC₅₀/4 h 1500 mg/l (rat)
- **Primary irritant effect:**
- **on the skin:**
Irritant to skin and mucous membranes.
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 available data show no carcinogenic, mutagenic or teratogenic effects.
- **Subacute to chronic toxicity:**
Continuous exposure may cause a slight fibrosis in the lung. Persons with existing respiratory problems (for example asthma, chronic obstructive pulmonary disease) maybe react more strongly to 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

(Contd. on page 8)

GB

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

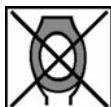
Trade name: 409B-340G Electrosolve Contact Cleaner

(Contd. of page 7)

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 to fish.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous to 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 even if small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic to aquatic organisms

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):** -
- **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

(Contd. on page 9)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: **409B-340G Electrosolve Contact Cleaner**

(Contd. of page 8)

· **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

- **Chemical safety assessment** A Chemical Safety Assessment has not been carried out.
- **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.

- **Reasons for amendments:**
 Change of trade name
 Safety phrases
 EC Regulation 453/2010
- **Replaces version dated:** 25.11.2009

(Contd. on page 10)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 02.11.2010

Version: 2

Revision: 02.11.2010

Trade name: 409B-340G Electrosolve Contact Cleaner

(Contd. of page 9)

· Relevant phrases

- H224 Extremely flammable liquid and vapour.
- H225 Highly flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H336 May cause drowsiness or dizziness.
- H361f Suspected of damaging fertility.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.
- R11 Highly flammable.
- R12 Extremely flammable.
- R38 Irritating to skin.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R62 Possible risk of impaired fertility.
- R65 Harmful: may cause lung damage if swallowed.
- R67 Vapours may cause drowsiness and dizziness.

· 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
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

· Sources:

MSDS of the supplier
 Information provided by the manufacturer
