

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: 4140 - 400G Flux Remover - Plastic Safe -aerosol**
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation:** Cleaner for electronics
- **Details of the supplier of the safety data sheet**

· **Manufacturer:**
MG Chemicals
1210 Corporate Drive,
Burlington, Ontario L7L 5R6
CANADA

PHONE: +1 905-331-1396
E-MAIL: support@mgchemicals.com
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· **Distributor:**
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- **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.

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



F+; Extremely flammable

R12: Extremely flammable.

- **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.

- **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 EU guidelines:**

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

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· Code letter and hazard designation of product:


F+ Extremely flammable

· Risk phrases:

12 Extremely flammable.

· Safety phrases:

16 Keep away from sources of ignition - No smoking.

51 Use only in well-ventilated areas.

60 This material and its container must be disposed of as hazardous waste.

· 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.

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

Buildup of explosive mixtures possible without sufficient ventilation.

· Classification in accordance with Directive 75/324/EEC: Extremely flammable
· Other hazards
· Results of PBT and vPvB assessment
· PBT: Not applicable.

· vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures
· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

CAS: 64-17-5 EINECS: 200-578-6 Index number: 603-002-00-5	ethanol F R11 Flam. Liq. 2, H225	50-100%
CAS: 811-97-2 EINECS: 212-377-0	1,1,1,2-tetrafluoroethane	25-50%
CAS: 67-63-0 EINECS: 200-661-7 Index number: 603-117-00-0	propan-2-ol Xi R36; F R11 R67 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	1-5%
CAS: 141-78-6 EINECS: 205-500-4 Index number: 607-022-00-5	ethyl acetate Xi R36; F R11 Flam. Liq. 2, H225; Eye Irrit. 2, H319; STOT SE 3, H336	< 2.5%

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

4 First aid measures

· Description of first aid measures
· General information: Remove affected persons from danger area and lay them down.

· After inhalation: Supply fresh air; consult a doctor in case of pain.

· After skin contact:

Wash with water and soap.

If symptoms persist, consult a doctor.

· After eye contact: Rinse opened eye for several minutes under running water.

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- **After swallowing:**
Do not induce vomiting.
Drink 2-4 glasses of water.
Never give anything by mouth to an unconscious person.
Seek medical treatment.
 - **Information for doctor:**
 - **Most important symptoms and effects, both acute and delayed**
After inhalation:
Headache
Dizziness
Unconsciousness
After the uptake of large quantities:
Vomiting
Diarrhoea
Co-ordination difficulties
Gastric or intestinal disorders.
 - **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**
Dangerous decomposition products see chapter 10: stability and reactivity
 - **Advice for firefighters**
 - **Protective equipment:** 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
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**



Wear protective equipment. Keep unprotected persons away.

- 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.
- **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.
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.
Wash spill area with soap and water.

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- **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**

- Ensure good ventilation/exhaustion at the workplace.

- Avoid contact with eyes and skin.

- Open and handle receptacle with care.

- **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.

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.

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.

- Store in a cool location.

- 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 oxidizing agents.

- Store away from reducing agents.

- Store away from foodstuffs.

- Store away from feed.

- **Further information about storage conditions:**

- Protect from frost.

- Protect from humidity and water.

- 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:** No further data; see item 7.

- **Control parameters**

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

64-17-5 ethanol

WEL (Great Britain) Long-term value: 1920 mg/m³, 1000 ppm

OEL (Ireland) Long-term value: 1900 mg/m³, 1000 ppm

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811-97-2 1,1,1,2-tetrafluorethaneWEL (Great Britain) Long-term value: 4240 mg/m³, 1000 ppm**67-63-0 propan-2-ol**WEL (Great Britain) Short-term value: 1250 mg/m³, 500 ppmLong-term value: 999 mg/m³, 400 ppm

OEL (Ireland) Short-term value: 400 ppm

Long-term value: 200 ppm

Sk

141-78-6 ethyl acetate

WEL (Great Britain) Short-term value: 400 ppm

Long-term value: 200 ppm

OEL (Ireland) Long-term value: 400 mg/m³, 200 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:**

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.

Avoid contact with the eyes and skin.

Do not inhale gases / fumes / aerosols.

- **Breathing equipment:**

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

Short term filter device:

Filter A

- **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

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

- **General Information:**

- **Appearance:**

Form: Aerosol

Colour: Clear

- **Odour:** Like alcohol

- **pH-value:** 7

- **Change in condition:**

Melting point/Melting range: not determined

Boiling point/Boiling range: 78°C

- **Flash point:** 13°C

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- **Ignition temperature:** 422°C
 - **Decomposition temperature:** Not determined.
 - **Danger of explosion:** Aerosol.
Pressurized container.
Do not pierce.
 - **Explosion limits:**
 - Lower:** 6 Vol %
 - Upper:** 36 Vol %
 - **Vapour pressure at 21°C:** 48 PSI
 - **Density:** 0.89 g/cm³
 - **Solubility in / Miscibility with Water:** Miscible
-

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** Violent reactions with above-mentioned substances.
 - **Incompatible materials:**
 - Alkali metals
 - Alkaline-earth metals
 - Aluminium powder
 - Zinc powder
 - Magnesium
 - Beryllium powder
 - Acids
 - Acid anhydrides
 - Oxidants
 - Reducing agents
 - **Hazardous decomposition products:**
In case of fire or at high temperatures the formation of following decomposition products is possible.
 - Carbon monoxide and carbon dioxide
 - Halogens
 - Halogen acids
 - carbonyl halides
-

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

 - Oral LD₅₀ 7000 mg/kg (rat)
 - Dermal LD₅₀ 20000 mg/kg (rabbit)
- **Primary irritant effect:**
- **on the skin:**
May cause irritation to the skin.
Continuing or repeated contact with the skin may cause dermatitis.
- **on the eye:** Slightly irritating
- **Sensitization:** No sensitizing effects known.

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- **Subacute to chronic toxicity:** Prolonged and/or frequent exposure may damage liver and kidneys.
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12 Ecological information

- **Toxicity**

- **Aquatic toxicity:**

- **64-17-5 ethanol**

- EC₅₀/24h 10800 mg/l (daphnia magna)

- LC₅₀/48h 8140 mg/l (leuciscus idus)

- LC₅₀/96h 14200 mg/l (Pimephales promelas)

- **67-63-0 propan-2-ol**

- EC₅₀/48h > 9714 mg/l (daphnia magna)

- EC₅₀/72h > 1450 mg/l (algae)

- LC₅₀/96h 10400 mg/l (Pimephales promelas)

- **141-78-6 ethyl acetate**

- EC₅₀/48h 717 mg/l (daphnia magna)

- IC₅₀/48h 3300 mg/l (des)

- LC₅₀/96h 230 mg/l (Pimephales promelas)

- **Persistence and degradability**

- **Other information:** The product has not been tested.

- **Additional ecological information:**

- **General notes:**

- Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous to water.

- According to appendix 4 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.
-

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:** 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
- **UN proper shipping name:** 1950 AEROSOLS
- **Limited quantities (LQ):** LQ2
- **Transport category:** 2

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- **Tunnel restriction code:** D
- **Remarks:** Limited Quantity: 1 l inner packing, 30 l packing unit
- **Maritime transport IMDG:**



- **IMDG Class:** 2.1
- **UN Number:** 1950
- **Label:** 2.1
- **Packaging group:** -
- **EMS Number:** F-D,S-U
- **Marine pollutant:** No
- **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
- **Special precautions for user** Warning: Gases.
- **Transport/Additional information:**
Protect from heat!
Protect from moisture.

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Technical guidance (air):**
- **Class Share in %:**
- **NK 70.0**
- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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 phrases**
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

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H336 May cause drowsiness or dizziness.

R11 Highly flammable.

R36 Irritating to eyes.

R66 Repeated exposure may cause skin dryness or cracking.

R67 Vapours may cause drowsiness and dizziness.

• Department issuing MSDS:

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• 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