

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

· 1.1 Product identifier

- **Trade name: 410**
 - **Other Means of Identification:** Ammonium Persulfate
 - **Related Part Number:** 410, 410-1KG, 410-25KG
 - **CAS Number:**
7727-54-0
 - **EC number:**
231-786-5
 - **Index number:**
016-060-00-6

· 1.2 Relevant identified uses of the substance or mixture and uses advised against

- **Application of the substance / the mixture** For etching printed circuits
- **Uses advised against** Not applicable

· 1.3 Details of the supplier of the safety data sheet

· **Manufacturer/Supplier:**

MG Chemicals Ltd. (Head Office)
1210 Corporate Drive
Burlington, Ontario L7L 5R6
CANADA
+(1) 905-331-1396
info@mgchemicals.com

MG Chemicals
Heame House, 23 Bliston Street
Sedgely Dudley DY3 1JA.
United Kingdom
+(44) 1663 362888

MG Chemicalst Ltd.
Level 2, Vision Exchange, Building Territorials Street,
Zone 1, Central Business, District,
Birkirkara CBD 1070,
MALTA

- **Further information obtainable from:** sds@mgchemicals.com

· 1.4 Emergency telephone number:

Verisk 3E (Access code: 335388)
+(44) 20 3514787
+(1) 760 476 3961
UK Toll free: +(0) 800 680 0425

Members of the public seeking specific information on poisons should contact:
In England and Wales: NHS 111 - dial 111
In Scotland: NHS 24 - dial 111

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008



GHS03 flame over circle

Ox. Sol. 3 H272 May intensify fire; oxidiser.



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The substance is classified and labelled according to the GB CLP regulation.

Hazard pictograms



GHS03



GHS07



GHS08

Signal word Danger

Hazard-determining components of labelling:

diammonium peroxodisulphate

Hazard statements

H272 May intensify fire; oxidiser.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

Precautionary statements

P102 Keep out of reach of children.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing dust.

P280 Wear protective gloves, protective clothing, and eye protection.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

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P501 Dispose of contents and container in accordance with local, regional, and national regulations. (Contd. of page 2)

2.3 Other hazards

Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

· **Determination of endocrine-disrupting properties** Endocrine Disruptor substance $\geq 0.1\%$ = none

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS No. Description

7727-54-0 diammonium peroxodisulphate

Identification number(s)

- **EC number:** 231-786-5
- **Index number:** 016-060-00-6

Dangerous components:

CAS: 7727-54-0 EINECS: 231-786-5 Index number: 016-060-00-6	diammonium peroxodisulphate ⚠ Ox. Sol. 3, H272; ⚠ Resp. Sens. 1, H334; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335	>99.0%
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SECTION 4: First aid measures

4.1 Description of first aid measures

General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

After inhalation:

Remove person to fresh air and keep comfortable for breathing.

If feeling unwell: Call a POISON CENTRE or doctor.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor.

After skin contact:

Wash with plenty water.

If skin irritation or rash occurs: Get medical advice or attention.

Take off contaminated clothing and wash it before reuse.

After eye contact:

Rinse cautiously with water for 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice or attention.

After swallowing:

Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

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· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.

· **5.2 Special hazards arising from the substance or mixture**

Not flammable or combustible, but burns if involved in a fire. Produces irritating smoke of unknown toxicity in fires.

Prevent fire-fighting wash from entering waterway or sewer system.

· **Hazardous combustion products:**

Carbon Oxides (COx)
Nitrogen Oxides (NOx)
Sulfur oxides

· **5.3 Advice for firefighters**

· **Protective equipment:** Wear self-contained breathing apparatus and full fire-fighting turn-out gear.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Avoid formation of dust.

Avoid breathing dust.

You may wet with a water spray to prevent dust cloud formation.

Remove or keep away all sources of open flames and flammable or combustible materials.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 Methods and material for containment and cleaning up:**

Sweep or shovel into a container that can be tightly closed.

Use soap and water to remove the last traces of residue.

Do NOT combine with flammable or combustible waste.

· **6.4 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.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Prevent formation of dust.

Wear protective gloves and eye protection.

Wash hands and exposed skin thoroughly after handling.

Take off contaminated clothing and wash it before reuse.

Contaminated work clothing should not be allowed out of the workplace.

Use only outdoors or in a well-ventilated area.

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Do not eat, drink, or smoke when using this product.

In case of inadequate ventilation wear respiratory protection.

Avoid breathing fumes or dust.

· **Information about fire - and explosion protection:**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep away from clothing and other combustible materials.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

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

Keep in a dry and clean area, away from incompatible substances

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Store locked up.

· **7.3 Specific end use(s)** See section 1.2

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:** Not required.

· **Additional information:**

The lists valid during the making were used as basis.

Refer to the national or regional occupational exposure limit regulation for abbreviations and acronyms.

· **8.2 Exposure controls**

· **Appropriate engineering controls** No further data; see section 7.

· **Individual protection measures, such as personal protective equipment**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Advice should be sought from respiratory protection specialists.

If the product is heated or worker has a known allergic reaction, consider using a full mask with organic vapor cartridge or with an independent air supply.

· **Hand protection**



Protective gloves: EN374

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of 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.

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· **Penetration time of glove material**

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

· **Eye/face protection**



Safety glasses or tightly sealed goggles: EN 166

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· Physical state	Solid
· Form:	Crystalline
· Colour:	White
· Odour:	Odourless
· Odour threshold:	Not available
· Melting point/freezing point:	<160 °C
· Flammability	Non flammable
· Lower and upper explosion limit	
· Lower:	Not applicable
· Upper:	Not applicable
· Flash point:	Not applicable.
· pH	1–2 (22.8%)
· Viscosity:	
· Kinematic viscosity	Not applicable.
· Solubility	
· water at 20 °C:	559 g/l
· Density at 20 °C:	>1.982 g/cm ³
· Relative density:	Not available
· Bulk density:	950–1,050 kg/m ³
· Vapour density (air=1):	Not applicable.
· Particle characteristics	See section 3.

· **9.2 Other information**

· **9.2.1 Information with regard to physical hazard classes**

· Oxidising solids May intensify fire; oxidiser.

· **9.2.2 Other safety characteristics**

· Ignition temperature: Not determined.
· Explosive properties: Product does not present an explosion hazard.

· Solvent content:
· Organic solvents: Not available

· Molecular weight 228.2 g/mol

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** May decompose on exposure to moist air or water and heat.
- **10.2 Chemical stability** Chemically stable at normal temperatures and pressures.
 - **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** Avoid ignition sources, open flames, and incompatible substances.
- **10.5 Incompatible materials:**
Strong oxidizing agents
inflammable or combustible organic materials
powdered metals
- **10.6 Hazardous decomposition products:** Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
 - **Acute toxicity** Harmful if swallowed.

· LD/LC50 values relevant for classification:		
ATE (Acute Toxicity Estimates)		
Oral	LD50	<828 mg/kg (rat)
7727-54-0 diammonium peroxodisulphate		
Oral	LD50	820 mg/kg (rat)

- **Primary irritant effect:**
 - **Skin corrosion/irritation** Causes skin irritation.
 - **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure** May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **Summary of Effects and Symptoms by Routes of Exposure**
 - **Eyes:**
pain
redness, serious irritation
 - **Skin:**
rash, allergic contact dermatitis
redness, irritation
dry skin
 - **Inhalation:**
irritation of the respiratory tract
wheezing, shortness of breath, difficulty breathing
cough

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· **Swallowed:**

nausea
diarrhea
sore throat
vomiting

· **Additional toxicological information:**

· **Delayed and immediate effects as well as chronic effects from short and long-term exposure**

Long-term exposure by inhalation or skin contact may cause an allergic skin and respiratory reaction in some people.

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

Substance is not listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Additional ecological information:**

· **General notes:**

Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.

Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation** This material and its container must be disposed of as hazardous waste.

· **European waste catalogue**

HP2	Oxidising
HP4	Irritant - skin irritation and eye damage
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

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HP6	Acute Toxicity
HP13	Sensitising

· **Uncleaned packaging:**

· **Recommendation:**

Containers may still present a chemical hazard/ danger when empty.
Dispose of contents in accordance with all local, regional, national, and international regulations.
Where possible retain label warnings and SDS and observe all notices pertaining to the product.

SECTION 14: Transport information

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN1444
· 14.2 UN proper shipping name · ADR, IMDG · IATA	AMMONIUM PERSULPHATE Ammonium persulphate
· 14.3 Transport hazard class(es) · ADR, IMDG, IATA	 · Class 5.1 Oxidising substances. · Label 5.1
· 14.4 Packing group · ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Segregation groups · Stowage Category	Not applicable. 50 F-A,S-Q (SGG2) Ammonium compounds A
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	 Limited Quantity 410-1KG
· ADR · Limited quantities (LQ) · Excepted quantities (EQ)	5 kg Code: E1 Maximum net quantity per inner packaging: 30

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<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	<p>g Maximum net quantity per outer packaging: 1000 g</p> <p>3 E</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>5 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>UN 1444 AMMONIUM PERSULPHATE, 5.1, III</p>

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Poisons Act**

<ul style="list-style-type: none"> · Regulated explosives precursors (Part 1) 	<p>Substance is not listed.</p>
<ul style="list-style-type: none"> · Regulated poisons (Part 2) 	<p>Substance is not listed.</p>
<ul style="list-style-type: none"> · Reportable explosives precursors (Part 3) 	<p>Substance is not listed.</p>
<ul style="list-style-type: none"> · Reportable poisons (Part 4) 	<p>Substance is not listed.</p>

- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **Seveso category P8 OXIDISING LIQUIDS AND SOLIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 65

<ul style="list-style-type: none"> · DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II 	<p>Substance is not listed.</p>
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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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**
- H272 May intensify fire; oxidiser.

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H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.

• **Department issuing SDS:** Regulatory department

• **Contact:** sds@mgchemicals.com

• **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

ATE: Acute toxicity estimate values

Ox. Sol. 3: Oxidizing solids – Category 3

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

—GB—