

Etching

Order code	Manufacturer code	Description
34-0758	n/a	FERRIC CHLORIDE SOLUTION 5L (RE)

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The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007

Ferric Chloride Etching Solution

Part Numbers: 600-015 - 5 litres
600-016 - 25 litres

Description

Ferric Chloride pellets for producing a solution for etching copper printed circuit boards and other metals.

Preparation

BEFORE HANDLING WEAR PROTECTIVE CLOTHING AND READ THE HEALTH AND SAFETY INFORMATION ON THE REAR OF THIS SHEET.

For stainless steel, nickel and high nickel alloy use as supplied. For copper, brass and bronze use 30% water.

Usage

Use between 35°C and 55°C. For safe and efficient etching always use at the optimum temperature of approximately 45°C in a Mega Temperature controlled etching tank.

Health and Safety

Always wear protective clothing. Full Health and Safety details are on the rear of this instruction sheet. A report by an occupational hygienist concluded that under the test conditions, NO LOCAL VENTILATION IS REQUIRED using this etchant in Mega's PCB processing tanks. A copy of this report is available upon request.

Ferric Stain Remover

Stains left from drips or splashes of the etching solution can be removed with Mega's 600-039 Ferric Chloride Cleaner (1 Kg).

Associated Products

A range of associated products for use with this etchant are featured in our free product catalogue. Please telephone us for your free copy



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SECTION 1 PRODUCT IDENTIFICATION AND MANUFACTURE

NAME: FERRIC CHLORIDE HEXAHYDRATE SOLUTION
PART NO: 600-015 (5 Litres) 600-016 (25 Litres)

MANUFACTURER'S/SUPPLIERS NAME, REGISTERED ADDRESS AND

EMERGENCY TEL NO:

MEGA ELECTRONICS LTD.,
THE GRIP INDUSTRIAL ESTATE,
LINTON, CAMBRIDGE.
ENGLAND, CB1 6NR.
TELEPHONE: +0044 01223 893900

ORGANISATIONS NAME & ADDRESS AT WHICH MANUFACTURED

BRENNTAG (UK) LTD.
BILTON WAY INDUSTRIAL ESTATE
LUTTERWORTH, LEICESTERSHIRE.
LE17 4HH
TEL: 01865 407333

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	%BY WT	CAS & EEC Nos.:	HAZARD	PHRASE NOS:
FERRIC CHLORIDE SOLUTION	40	N/A	C	R22, R34

HARMFUL IF SWALLOWED, CAUSES BURNS.

SECTION 3 HAZARDS IDENTIFICATION

HARMFUL IF SWALLOWED. CAUSES BURNS.

SECTION 4 FIRST AID MEASURES

INHALATION:

REMOVE TO FRESH AIR, WASH MOUTH AND NOSE WITH WATER. IF IRRITATION PERSISTS OR COUGH OR OTHER SYSTEMS DEVELOP, CONSULT DOCTOR.

SKIN CONTACT:

REMOVE CONTAMINATED CLOTHING AND WASH AFFECTED AREA WITH SOAP AND WATER. IF IRRITATION PERSISTS, CONSULT DOCTOR.

EYE CONTACT:

FLUSH WITH WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS.

INGESTION:

IF CONSCIOUS, RINSE MOUTH OUT WITH WATER. GIVE PLENTY OF WATER (CA..500ml) TO DRINK AND TRANSPORT TO HOSPITAL

MEDICAL NOTES: TREAT SYMPTOMATICALLY.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

NON FLAMMABLE, IF HEATED THE MATERIAL DECOMPOSES GIVING OFF TOXIC, ACIDIC FUMES OR HCL

COMBUSTION PRODUCTS

WHEN HEATED TO DECOMPOSITION, EMITS TOXIC FUMES.

FIRE/EXPLOSION SCENARIOS

USE MEDIA SUITABLE FOR MATERIAL WHICH IS BURNING
SELF CONTAINED BREATHING APPARATUS SHOULD BE WORN.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION WEAR GLOVES, GOGGLES.

ENVIRONMENTAL PRECAUTIONS. CONTAIN IF MATERIAL HAS ENTERED SURFACE DRAINS, ADVISE LOCAL AUTHORITIES.

METHODS FOR CLEARING UP: COLLECT FOR DISPOSAL. FLUSH AWAY RESIDUES AND SMALL SIPLAGE, IF PERMITTED.

SECTION 7 HANDLING AND STORAGE

HANDLING PRECAUTIONS

MINIMISE CONTACT WITH SKIN. AVOID CONTACT WITH EYES. EYEWASH FACILITIES SHOULD BE AVAILABLE.

STORAGE INCLUDING ANY SPECIAL REQUIREMENTS (TEMPERATURE, VENTILATION, ETC)

DRAINAGE FROM BULK MATERIAL WILL BE ACIDIC. DO NOT STORE WITH ALKALIS. THE PRODUCT REASTCS WITH METALS WITH THE EVOLUTION OF HYDROGEN.

SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS/ VENTILATION

REFER TO CURRENT EH40.

RESPIRATORY PROTECTION

N/A

EYE PROTECTION

GOGGLES GIVING COMPLETE PROTECTION TO EYES.

HAND PROTECTION

PLASTIC OR RUBBER GLOVES.

SKIN PROTECTION

PROTECT SKIN FROM PROLONGED EXPOSURE.

WEAR OVERALLS. PLASTIC APRON AND BOOTS IF HANDLING LARGE QUANTITIES.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: LIQUID

COLOUR DARK BROWN

ODOUR: CHARACTERISTIC

BOILING POINT DECOMPOSES

MELTING POINT °C 12°C:

FLASH POINT °C (Open/Closed Cup): N.A.

AUTOIGNITION TEMP °C: N.A.

THERMAL DECOMPOSITION TEMP °C :

BOILING POINT - HCL WILL BE RELEASED WITH HEATED

OXIDISING PROPERTIES:

EXPLOSIVE PROPERTIES AT 25°C: NON FLAMMABLE

EXPLOSIVE LIMITS AT 25°C (% VOL IN AIR)

LOWER: UPPER:

RELATIVE DENSITY: 1.43g/ml

SOLID CONTENT %:

SOLUBILITY IN WATER: MISICIBLE – pH solutions in water are acidic (<1)
INSOLUBILITY IN ALCOHOL – NO DATA

VOLATILE CONTENT: AVOID CONTACT WITH, ALKALIS, STABLE UNDER REDOMMENED CONDITIONS

VAPOUR PRESSURE mmHg at 20°C

RELATIVE VAPOUR DENSITY (air = 1):

(of principle component and name):

EVAPORATION RATE

CONDUCTIVITY: VISCOSITY 10mPa.s.AT 20c

(n-butyl acetate = 1):

SECTION 10 STABILITY AND REACTIVITY PROPERTIES

CONDITIONS TO AVOID: STABLE UNDER RECOMMENDED CONDITIONS

MATERIALS TO AVOID: REACTS WITH ALKALIS

HAZARDOUS DECOMPOSITION PRODUCTS: Hc1 WILL BE RELEASED WHEN HEATED.

SECTION 11 TOXICOLOGICAL INFORMATION

EFFECT OF EYE CONTACT: RISK OF SERIOUS DAMAGE

EFFECT OF SKIN CONTACT: CORROSIVE

EFFECT OF INHALATION: UNLIKELY

EFFECT OF INGESTION: MODERATELY TOXIC

LD50 (ORAL RAT):

450mg / kg.

SECTION 12 ECOLOGICAL INFORMATION

MOBILITY: SOLUBLE IN WATER

PERSISTENCE AND DEGRADABILITY: REPORTED AS HAVING NO ADVERSE EFFECTS ON SEWAFE SYSTEMS.

ECOTOXICITY: IRON SALTS ARE COMMONLY ADDED TO INLAND LAKES. ESTUARIES AND WATERWAYS TO REMOVE PHOSPHATES AND THEREBY PREVENT EUTROPHICATION WHICH IS EVIDENT IN EXPLOSIVE ALCAL GROWTH DUE TO HIGH PHOSPHATE LEVELS.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal of product – approved landfill

Dispose of packaging: approved landfill site.

National or regional legislation: Classified as special waste for controlled disposal

SECTION 14 TRANSPORT INFORMATION

UN No: 2582

UK ROAD – HAZCHEM CODE 2Z

CLASSIFICATION 8

PACKING GROUP III

RID-ADR. CLASS 8

LABEL FERRIC CHLORIDE SOLUTION

MATERIAL CODE 5c

KEMMLER CODE 80

IMO CLASS III

LABEL: FERRIC CHLORIDE SOLUTION

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PACKING GROUP III

MARPOL ANNEX II– NOT CLASSIFIED

ICAO: CLASS 8

LABEL: FERRIC CHLORIDE SOLUTION

PACKING GROUP III

SECTION 15 REGULATORY INFORMATION

THE CHEMICALS (HAZARD INFORMATION & PACKIAGING FOR SUPPLY) REGULATION 1994.

EINECS No. 231-729-4

INDEX No: not listed.

RISK PHRASE Nos. & WORDS:

R22 Harmful if swallowed

R34 Causes burns

SAFETY PHRASE Nos. & WORDS:

S36/37/39 Wear suitable protective clothing, gloves and eye / face protection

CLASSIFICATION / SYMBOL C=CORROSIVE

EXPOSURE LIMITS: refer to current EH40

NATIIONAL LEGISLATION

The following are some of the Regulations which should be considered when dealing with this product:

Control of Pollution (special wastes) Regulation 1980

The Chemicals (Hazard Information & Packaging for Supply) Regulation 1994

Control of Pollution Act 1974

Environmental Protection Act 1990

Environmental Protection (Duty of Care) Regulation 1991

OTHER INFORMATION

RECOMMENDED USES: Pigment, iron sales, water treatment, catalyst, feed additive, reducing agent. Not supplied for use by the general public.

SOURCES OF DATA USED TO COMPILE DATA SHEET. Manufacturers data sheets, National and International regulations.

Dated: 07/01/02