

# SAFETY DATA SHEET

## Powerflow Flux

### 1. Identification of the preparation and of the company

**Product name** : Powerflow Flux

**Code** : 20437

**Head Office** : **Cookson Electronics**  
**Forsyth Road**  
**Sheerwater**  
**Woking**  
**Surrey**  
**England**  
**GU21 5RZ**  
**Tel: +44(0)1483 758400**  
**Fax: +44(0)1483 728837**

**Manufacturer** : Cookson Electronics Assembly  
 Materials Group  
 Ashford Manufacturing Site  
 Henwood Industrial Estate  
 Hythe Road  
 Ashford  
 Kent  
 England  
 TN24 8DH  
 Tel: +44 (0) 1233 610110  
 Fax: +44 (0) 1233 664323

**Material uses** : soldering

### 2. Composition/information on ingredients

**Substance/preparation** : Preparation

Ingredient name	CAS number	%	EC number	Classification
Europe nonylphenoxydiglycol	68412-54-4	20 - 30	500-209-1	Xn; R22 Xi; R41 N; R51/53
Hydrochloric acid	7647-01-0	1 - 5		C; R34 Xi; R37
<b>See section 16 for the full text of the R-phrases declared above</b>				

\* Occupational Exposure Limit(s), if available, are listed in Section 8

\* The classifications listed, indicate the potential hazards of the ingredients

### 3. Hazards identification

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

**Classification** : Xi; R41  
 R52/53

Effects and symptoms

**Inhalation** Over-exposure by inhalation may cause respiratory irritation.

**Ingestion** May cause burns to mouth, throat and stomach.

**Skin contact** Not available.

**Eye contact** Very hazardous by the following route of exposure: of eye contact (irritant).

**Toxicity data** Not available.

**See section 11 for more detailed information on health effects and symptoms.**

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## 4. First-aid measures

### First-aid measures

- Inhalation** : If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Obtain medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

See section 11 for more detailed information on health effects and symptoms.

## 5. Fire-fighting measures

### Extinguishing media

- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : No specific fire or explosion hazard.  
Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. This material is harmful to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Decomposition products may include the following materials:  
carbon oxides  
halogenated compounds
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material.
- Large spill** : Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

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## 6. Accidental release measures

**Small spill** : Move containers from spill area. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.

## 7. Handling and storage

**Handling** : Put on appropriate personal protective equipment (see section 8). Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container.

**Storage** : Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

### Packaging materials

**Recommended** : Use original container.

## 8. Exposure controls/personal protection

### Exposure limit values

<u>Ingredient name</u>	<u>Occupational exposure limits</u>
<b>Europe</b>	
Hydrochloric acid	<b>EU OEL (Europe, 6/2000).</b> STEL: 15 mg/m <sup>3</sup> 15 minute(s). Form: All forms STEL: 10 ppm 15 minute(s). Form: All forms TWA: 8 mg/m <sup>3</sup> 8 hour(s). Form: All forms TWA: 5 ppm 8 hour(s). Form: All forms
<b>Sweden</b>	
Hydrochloric acid	<b>AFS (Sweden, 3/2000).</b> TGV: 8 mg/m <sup>3</sup> Form: All forms TGV: 5 ppm Form: All forms KTV: 8 mg/m <sup>3</sup> 15 minute(s). Form: All forms KTV: 5 ppm 15 minute(s). Form: All forms
<b>Denmark</b>	
Hydrochloric acid	<b>Arbejdstilsynet (Denmark, 10/2002).</b> Loftværdi: 7 mg/m <sup>3</sup> Form: All forms Loftværdi: 5 ppm Form: All forms GV: 7 mg/m <sup>3</sup> 8 hour(s). Form: All forms GV: 5 ppm 8 hour(s). Form: All forms
<b>Norway</b>	
Hydrochloric acid	<b>Arbejdstilsynet (Norway, 12/2003).</b> Takverdi: 7 mg/m <sup>3</sup> Form: All forms Takverdi: 5 ppm Form: All forms AN: 7 mg/m <sup>3</sup> 8 hour(s). Form: All forms AN: 5 ppm 8 hour(s). Form: All forms
<b>France</b>	
Hydrochloric acid	<b>INRS (France, 12/1999).</b> VLE: 7.5 mg/m <sup>3</sup> 15 minute(s). Form: All forms VLE: 5 ppm 15 minute(s). Form: All forms
<b>Netherlands</b>	
Hydrochloric acid	<b>Nationale MAC-lijst (Netherlands, 1/2004). Notes:</b> TGG 15 min: 15 mg/m <sup>3</sup> 15 minute(s). Form: All forms TGG 15 min: 10 ppm 15 minute(s). Form: All forms TGG: 8 mg/m <sup>3</sup> 8 hour(s). Form: All forms TGG: 5 ppm 8 hour(s). Form: All forms

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## 8. Exposure controls/personal protection

### Germany

Hydrochloric acid

#### MAK-Werte Liste (Germany, 7/2003).

Spitzenbegrenzung: 7.6 mg/m<sup>3</sup>, 4 times per shift, 15 minute(s).

Form: All forms

Spitzenbegrenzung: 5 ppm, 4 times per shift, 15 minute(s). Form: All forms

TWA: 7.6 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 5 ppm 8 hour(s). Form: All forms

#### TRGS900 MAK (Germany, 9/2003).

Spitzenbegrenzung: 8 mg/m<sup>3</sup> Form: All forms

TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms

### Finland

Hydrochloric acid

#### Työterveyslaitos (Finland, 12/2002).

STEL: 7.6 mg/m<sup>3</sup> 15 minute(s). Form: All forms

STEL: 5 ppm 15 minute(s). Form: All forms

### United Kingdom (UK)

Hydrochloric acid

#### EH40-OES (United Kingdom (UK), 1/2003).

STEL: 8 mg/m<sup>3</sup> 15 minute(s). Form: All forms

STEL: 5 ppm 15 minute(s). Form: All forms

TWA: 2 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 1 ppm 8 hour(s). Form: All forms

### Austria

Hydrochloric acid

#### BMWA\_MAK (Austria, 12/2003).

Spitzenbegrenzung: 15 mg/m<sup>3</sup>, 8 times per shift, 5 minute(s). Form: All forms

Spitzenbegrenzung: 10 ppm, 8 times per shift, 5 minute(s). Form: All forms

TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 5 ppm 8 hour(s). Form: All forms

### Switzerland

Hydrochloric acid

#### SUVA (Switzerland, 12/2003).

Kurzzeitgrenzwerte: 7.5 mg/m<sup>3</sup> 15 minute(s). Form: All forms

Kurzzeitgrenzwerte: 5 ppm 15 minute(s). Form: All forms

MAK: 7.5 mg/m<sup>3</sup> 8 hour(s). Form: All forms

MAK: 5 ppm 8 hour(s). Form: All forms

### Belgium

Hydrochloric acid

#### Lijst Grenswaarden / Valeurs Limites (Belgium, 10/2003).

STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms

STEL: 10 ppm 15 minute(s). Form: All forms

TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 5 ppm 8 hour(s). Form: All forms

### Spain

Hydrochloric acid

#### INSHT (Spain, 10/2004).

VLA-EC: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms

VLA-EC: 10 ppm 15 minute(s). Form: All forms

VLA-ED: 7.6 mg/m<sup>3</sup> 8 hour(s). Form: All forms

VLA-ED: 5 ppm 8 hour(s). Form: All forms

### Turkey

Hydrochloric acid

#### EU OEL (Europe, 6/2000).

STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms

STEL: 10 ppm 15 minute(s). Form: All forms

TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 5 ppm 8 hour(s). Form: All forms

### Czech Republic

## 8. Exposure controls/personal protection

Hydrochloric acid	<p><b>178/2001 (Czech Republic, 1/2001).</b>            STEL: 15 mg/m<sup>3</sup> 10 minute(s). Form: All forms            STEL: 10.185 ppm 10 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5.432 ppm 8 hour(s). Form: All forms</p>
<b>Ireland</b>	
Hydrochloric acid	<p><b>NAOSH (Ireland, 1/2002).</b>            OELV: 14 mg/m<sup>3</sup> 15 minute(s). Form: All forms            OELV: 10 ppm 15 minute(s). Form: All forms            OELV: 7 mg/m<sup>3</sup> 8 hour(s). Form: All forms            OELV: 5 ppm 8 hour(s). Form: All forms</p>
<b>Italy</b>	
Hydrochloric acid	<p><b>EU OEL (Europe, 6/2000).</b>            STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms            STEL: 10 ppm 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>
<b>Estonia</b>	
Hydrochloric acid	<p><b>Sotsiaalminister (Estonia, 9/2001).</b>            STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms            STEL: 10 ppm 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>
<b>Lithuania</b>	
Hydrochloric acid	<p><b>Del Lietuvos Higienos Normos (Lithuania, 12/2001).</b>            STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms            STEL: 10 ppm 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>
<b>Slovakia</b>	
Hydrochloric acid	<p><b>Nariadenie Vldy Slovenskej republiky (Slovakia, 1/2002).</b>            CEIL: 15 mg/m<sup>3</sup> Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>
<b>Hungary</b>	
Hydrochloric acid	<p><b>EM-SzCsM (Hungary, 1/2002).</b>            PEAK: 16 mg/m<sup>3</sup> 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms</p>
<b>Poland</b>	
Hydrochloric acid	<p><b>Ministra Pracy I Polityki Spolecznej (Poland, 11/2002).</b>            STEL: 10 mg/m<sup>3</sup> 15 minute(s). Form: All forms            TWA: 5 mg/m<sup>3</sup> 8 hour(s). Form: All forms</p>
<b>Slovenia</b>	
Hydrochloric acid	<p><b>Uradni list Republike Slovenije (Slovenia, 1/2000).</b>            PEAK: 16 mg/m<sup>3</sup>, 4 times per shift, 15 minute(s). Form: All forms            PEAK: 10 ppm, 4 times per shift, 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>
<b>Latvia</b>	
Hydrochloric acid	<p><b>EU OEL (Europe, 6/2000).</b>            STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms            STEL: 10 ppm 15 minute(s). Form: All forms            TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms            TWA: 5 ppm 8 hour(s). Form: All forms</p>

## 8. Exposure controls/personal protection

### Greece

Hydrochloric acid

#### EU OEL (Europe, 6/2000).

STEL: 15 mg/m<sup>3</sup> 15 minute(s). Form: All forms

STEL: 10 ppm 15 minute(s). Form: All forms

TWA: 8 mg/m<sup>3</sup> 8 hour(s). Form: All forms

TWA: 5 ppm 8 hour(s). Form: All forms

### Portugal

Hydrochloric acid

#### Instituto Portugus da Qualidade (Portugal, 10/2003).

TLV-C: 5 ppm Form: All forms

STEL: 5 ppm 15 minute(s). Form: All forms

**Recommended monitoring procedures** : Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

### Exposure controls

**Occupational exposure controls** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Respiratory protection** : Recommended: None assigned.

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.  
<1 hours (breakthrough time): disposable vinyl

**Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.  
Recommended: face shield EN 166 3 9 -B

**Skin protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.  
Recommended: None assigned.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## 9. Physical and chemical properties

### General information

#### Appearance

**Physical state** : Solid.

**Colour** : White to yellowish.

**Odour** : Characteristic.

### Important health, safety and environmental information

**Solubility** : Partially soluble in the following materials: cold water and hot water.

## 10. Stability and reactivity

- Stability** : The product is stable. Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Conditions to avoid** : No specific data.
- Materials to avoid** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## 11. Toxicological information

### Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : Severely irritating to eyes. Risk of serious damage to eyes.

### Acute toxicity

### Over-exposure signs/symptoms

## 12. Ecological information

### Aquatic ecotoxicity

### Biodegradability

- Other adverse effects** : No known significant effects or critical hazards.
- AOX** : The product contains organically bound halogens and can contribute to the AOX value in waste water.

## 13. Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
- European waste catalogue (EWC)** : 16 03 06 organic wastes other than those mentioned in 16 03 05
- Hazardous waste** : Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

## 14. Transport information

### International transport regulations

## 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
ADR/RID Class	Not regulated.	-	-	-		-
IMDG Class	Not regulated.	-	-	-		-
IATA Class	Not regulated.	-	-	-		-

PG\* : Packing group

## 15. Regulatory information

### EU regulations

Classification and labeling have been determined according to EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use.

Hazard symbol or symbols :



Irritant

Risk phrases

: R41- Risk of serious damage to eyes.  
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases

: S2- Keep out of the reach of children.  
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S39- Wear eye/face protection.

Product use

: Consumer applications.

Europe inventory

: **Europe inventory:** Not determined.

### Germany

Hazard class for water

: 3 Appendix No. 4

Technical instruction on air quality control

: TA-Luft Number 5.2.1: 23.3%

### Italy

Emission control directive

: 85.937950186% Not classified.

## 16. Other information

Full text of R-phrases referred to in sections 2 and 3 - Europe

: R22- Harmful if swallowed.  
R34- Causes burns.  
R41- Risk of serious damage to eyes.  
R37- Irritating to respiratory system.  
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Full text of classifications referred to in sections 2 and 3 - Europe

: C - Corrosive  
Xn - Harmful  
Xi - Irritant  
N - Dangerous for the environment

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## 16. Other information

### History

Date of printing	: 26/04/2007.
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Version	: 1
Prepared by	: Simon Hosken Environmental, Health and Safety Manager

✔ Indicates information that has changed from previously issued version.

### References

The Health and Safety At Work Act 1974, section 6.  
Control of Substances Hazardous to Health (CoSHH) Regulations 2002 and its amendments.

Preparation contains solely TSCA and EINECS listed substances.

This safety data sheet has been prepared in accordance with the requirements of the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 which implement EC Directives 1999/45/EC and 2001/58/EC and their amendments.

### Notice to reader

*To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.*

*Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*