

# MULTICORE SOLDERS LIMITED

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## Revision

## Material Safety Data Sheet

### Product Information

#### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

**Product Name**      Multifix 450-01 Rework Flux

**Manufacturer**      Multicore Solders Ltd, Kelsey House, Wood Lane End,  
 Hemel Hempstead, Herts, HP2 4RQ, United Kingdom  
 Telephone +44 (0)1442 233233

#### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<i>Chemical Name</i>	<i>CAS Number</i>	<i>Proportion % w/w</i>	<i>Classification Symbol</i>	<i>Risk Phrases</i>
Modified rosins	*	35 - 40	Xn	R 42/43
Terpineol	10482-56-1	25 - 35	Xi	R 38
Malonic acid	141-82-2	1 - 5	Xn	R 22 - 41
Glycol diether	-	25 - 30	-	-

\* The CAS number is variable and depends on the exact identity of the modified rosins used. In the absence of data indicating that modified rosins are not sensitizers, Multicore Solders has classified them as Harmful, with Risk Phrase R 42/43.

#### Risk phrases

R 22      Harmful if swallowed  
 R 38      Irritating to skin  
 R 41      Risk of serious damage to eyes  
 R 42/43    May cause sensitisation by inhalation and skin contact

#### 3. HAZARDS IDENTIFICATION

This product contains modified rosins. Prolonged or repeated skin contact may cause an allergic reaction to develop. Inhalation of the fumes produced during soldering will irritate the respiratory system. Prolonged or repeated exposure to flux fumes may cause the development of occupational asthma and may cause rashes on exposed skin.

Animal studies with the glycol diether group of chemicals has identified reversible testicular atrophy, sperm damage and birth defects as a result of long term exposure. However, there have been no reported ill-effects in animals or humans from exposure to the specific glycol diether present in this product.

#### 4. FIRST-AID MEASURES

Inhalation      The flux fumes given off when heated will irritate the nose and throat and can cause an asthmatic type reaction.

Remove affected person to fresh air. Obtain medical attention if there is any respiratory distress.

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	Authorised by:	

Ingestion Will irritate the gastric tract.

If the casualty is unconscious but breathing, place on one side in the recovery position. If breathing has stopped apply artificial respiration or apply oxygen by mask. If the patient is conscious then encourage him/her to rinse the mouth out several times with water. Do not induce vomiting nor give anything to drink if the patient finds it difficult to swallow. Obtain urgent medical attention.

Skin Contact Skin irritation and rash may result on prolonged or repeated contact with the flux or flux fume.

Wash the affected parts of the body with soap and warm water. If skin irritation develops seek medical advice.

Eye Contact The flux fumes emitted when heated will irritate the eyes.

Flush **immediately** with plenty of water. Ensure that the eyeball and the inside of the eyelids are properly bathed by gently prising open the eyelids. Also make sure that the contaminated water runs off the face away from the eyes. Obtain urgent medical attention.

## 5. FIRE FIGHTING MEASURES

Extinguishers Suitable - dry chemical, carbon dioxide, water spray or foam.  
Unsuitable - water jet.

Under fire conditions this flux will release smoke, carbon monoxide and carbon dioxide. Fire fighters should wear full protective clothing and self-contained, positive pressure breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

Avoid contact with the skin and eyes. Scrape up the spillage and transfer to a suitable closed container for subsequent disposal.

## 7. HANDLING AND STORAGE

The fumes produced during soldering should be extracted away from the breathing zone of the operators. Ensure that the area is well ventilated. Avoid inhaling the flux fume.

Wash hands with soap and warm water after handling, particularly before eating, drinking or smoking. This product should be stored in a cool, dry area.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering methods to prevent or control exposure are preferred. Local exhaust or dilution ventilation and control of process conditions are suitable methods. Where engineering controls and work practices are not effective in controlling exposure then suitable respiratory protective equipment should be used.

### **Occupational Exposure Limits**

None assigned for the ingredients of this product.

From 1/1/97 the Occupational Exposure Standard for rosin-based solder flux fume is withdrawn since it measures formaldehyde levels which have been found to be a poor indicator of health risk. The proposed new method measures the resin-acid particulates in the fume and will be accompanied by a Maximum Exposure Limit likely to be introduced in 1999. In the meantime exposure to rosin-based flux fume should be prevented or, where this is not reasonably practicable, adequately controlled. Prevention of exposure should take precedence over adequate control. Users should consult the more detailed information and guidance published by the HSE.

**Respiratory Protection:** Necessary if there is a risk of exposure to high concentrations of flux fumes.

**Eye Protection:** Operators should wear safety glasses or goggles.

**Skin Protection:** Butyl rubber gloves and suitable workwear to protect the operators own clothing.

Under the Control of Substances Hazardous to Health Regulations 1994, there is a requirement for personnel who are exposed to substances hazardous to health to be under appropriate health surveillance. Guidance on this can be found in the HSE publication *Preventing Asthma at Work - How to Control Respiratory Sensitisers*.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pale brown paste
Odour	Mild
Boiling range	210 - 256°C
Solubility in water	Insoluble

## 10. STABILITY AND REACTIVITY

### Materials to Avoid

The flux will react vigorously with strong oxidising agents, possible with explosive violence.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

The flux fumes produced during soldering will irritate the nose and throat. For personnel that have developed an allergic reaction to modified rosin fumes, further exposure may cause symptoms of asthma (attacks of wheezing, chest tightness and breathlessness), alveolitis (breathlessness and flu-like symptoms), or rhinitis and conjunctivitis (runny or stuffy nose and watery or prickly eyes typical of hay fever.) Exposure to flux fumes may cause skin irritation and rash. Modified rosin can also cause sensitisation by skin contact causing redness, irritation, rash or pustules.

LD <sub>50</sub> (oral, rat) :	Modified rosin	>2500 mg/kg
	Glycol diether	3900 mg/kg
	Malonic acid	1310 mg/kg
	Terpineol	4300 mg/kg

### Chronic Toxicity

Prolonged or repeated skin contact with modified rosin can lead to an allergic contact dermatitis. The skin will react by producing anything from weals to pustules. Prolonged or repeated inhalation of modified rosin fumes may lead to occupational asthma. Cases of occupational asthma due to inhalation of rosin fumes produced from soldering fluxes are reportable under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995.

## 12. ECOLOGICAL INFORMATION

No information is available on the main ingredients of this product.

## 13. DISPOSAL CONSIDERATIONS

This product should be disposed of in accordance with local and national legislation. In the UK this is the Control of Pollution Act 1974, the Environmental Protection Act 1990 and regulations made under them.

This product contains a high proportion of organic solvents. It is a prescribed substance for release into land. The recommended disposal method is controlled incineration. If correctly incinerated the product will decompose to carbon dioxide and water only.

## 14. TRANSPORT INFORMATION

This product is not classified as hazardous for transport.

## 15. REGULATORY INFORMATION

Classification according to the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994 :



HARMFUL

R42/43	May cause sensitisation by inhalation (flux fumes) and by skin contact
R38	Irritating to skin
S23	Do not breathe fumes
S24/25	Avoid contact with skin
S37	Wear suitable gloves

### **Applicable EC Directives**

Dangerous Substances Directive 67/548/EEC as amended by Directive 92/32/EEC

Dangerous Preparations Directive 88/379/EEC as amended by Directive 90/492/EEC

Directive 80/1107/EEC on the protection of workers from the risk related to exposure to physical, chemical and biological agents at work

### **Applicable UK Legislation**

The Health and Safety at Work etc. Act 1974

The Control of Substances Hazardous to Health Regulations 1994

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

The Chemicals (Hazard Information and Packaging for Supply) Regulations 1994

*The information presented in this safety data sheet is accurate to the best of knowledge and belief of Multicore Solders Ltd. As we cannot anticipate all conditions under which this information and our products, or the products of other manufacturers in combination with our products, are used this safety data sheet cannot constitute the user's assessment of workplace risk. Users are advised to make their own tests to determine the safety and suitability of each product or product combination for their own purposes.*

## **16. OTHER INFORMATION**

### **Recommended Uses**

This product is a flux paste for assembly and re-work. Further information on use and application can be obtained from Multicore Solders' Technical Sales Team.

### **Further Detailed Guidance from the UK Health and Safety Executive**

HS(G) 37: An Introduction to Local Exhaust Ventilation

HS(G) 53: Respiratory Protective Equipment - a Practical Guide for Users

HS(G) 61: Surveillance of People Exposed to Health Risks at Work

HS(G) 97: A Step by Step Guide to the COSHH Regulations

L55 Preventing Asthma at Work: How to Control Respiratory Sensitisers

L73 A Guide to the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

MS24: Health Surveillance of Occupational Skin Diseases

MS25: Medical Aspects of Occupational Asthma

Approved Code of Practice - Management of Health and Safety at Work

General Approved Code of Practice to the COSHH Regulations

Health Surveillance Under COSHH: Guidance for Employers

EH26: Occupational Skin Diseases: Health and Safety Precautions

IND(G)248L Solder fume and you

IND(G)95(L) Respiratory Sensitisers: A Guide for Employers

IND(G)172(L) Breathe Freely - A Workers' Information Card on Respiratory Sensitisers

This safety data sheet has been produced to comply with the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994, (Commission Directive 91/155/EEC, as amended by Directive 93/112/EEC.)

**Reason for revision:** To reflect the withdrawal of the Occupational Exposure Standard for rosin pyrolysis products.