



**SAFETY DATA SHEET**  
**FR2 BUFF & RESTORE FLOOR MAINTAINER**  
 According to Regulation (EC) No 1907/2006, Annex II, as amended.

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

**1.1. Product identifier**

**Product name** FR2 BUFF & RESTORE FLOOR MAINTAINER

**Internal identification** C413

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

**Identified uses** Cleaning agent.

**Uses advised against** Use only for intended applications.

**1.3. Details of the supplier of the safety data sheet**

**Supplier** ARROW SOLUTIONS  
 RAWDON ROAD  
 MOIRA  
 SWADLINCOTE  
 DERBYSHIRE  
 DE12 6DA  
 TEL: +44 (0)1283 221044  
 FAX: +44 (0)1283 225731  
 sales@arrowchem.com

**1.4. Emergency telephone number**

**Emergency telephone** +44 (0) 777 8505 330 (24 hrs).

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**Classification (EC 1272/2008)**

**Physical hazards** Not Classified

**Health hazards** Not Classified

**Environmental hazards** Not Classified

**2.2. Label elements**

**Hazard statements** EUH208 Contains Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT). May produce an allergic reaction.

**Precautionary statements** P280 Wear eye protection.  
 P501 Dispose of contents/ container in accordance with national regulations.

**Detergent labelling** < 5% anionic surfactants, Contains Mixture of 5-Chloro-2-methyl-isothiazol-3(2H)-one and 2-Methylisothiazol-3(2H)-one with magnesium chloride and magnesium nitrate, 1,2-BENZOISOTHIAZOL-3(2H)-ONE

**2.3. Other hazards**



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**Skin contact** The product contains a small amount of sensitising substance. May cause skin sensitisation or allergic reactions in sensitive individuals. Product has a defatting effect on skin. Prolonged contact may cause dryness of the skin.

**Eye contact** May cause discomfort.

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

**Notes for the doctor** Treat symptomatically.

## SECTION 5: Firefighting measures

### **5.1. Extinguishing media**

**Suitable extinguishing media** Use fire-extinguishing media suitable for the surrounding fire.

### **5.2. Special hazards arising from the substance or mixture**

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Sulphurous gases (SO<sub>x</sub>). Ammonia or amines. Nitrous gases (NO<sub>x</sub>).

### **5.3. Advice for firefighters**

**Protective actions during firefighting** No specific firefighting precautions known.

## SECTION 6: Accidental release measures

### **6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Do not touch or walk into spilled material. Avoid contact with skin, eyes and clothing. Take care as floors and other surfaces may become slippery. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment.

### **6.2. Environmental precautions**

**Environmental precautions** Do not discharge into drains or watercourses or onto the ground.

### **6.3. Methods and material for containment and cleaning up**

**Methods for cleaning up** Wear suitable protective equipment, including gloves, goggles/face shield, respirator, boots, clothing or apron, as appropriate. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage.

### **6.4. Reference to other sections**

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet.

## SECTION 7: Handling and storage

### **7.1. Precautions for safe handling**

**Usage precautions** Wear protective gloves. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not reuse empty containers. Do not empty into drains. Avoid contact with contaminated tools and objects. Do not handle broken packages without protective equipment. Wash hands thoroughly after handling.

### **7.2. Conditions for safe storage, including any incompatibilities**

**Storage precautions** Store at temperatures between 4°C and 40°C.

**Storage class** Miscellaneous hazardous material storage.

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### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure controls/Personal protection

### 8.1. Control parameters

#### Amides, C8-18 (even numbers) and C18-unsatd, N,N-bis(hydroxyethyl)

<b>DNEL</b>	Industry - Dermal; Long term systemic effects: 4.16 mg/kg/day Industry - Inhalation; Long term systemic effects: 73.4 mg/m <sup>3</sup> Consumer - Dermal; Long term systemic effects: 2.5 mg/kg/day Consumer - Inhalation; Long term systemic effects: 21.73 mg/m <sup>3</sup> Consumer - Oral; Long term systemic effects: 6.25 mg/kg/day
<b>PNEC</b>	- Fresh water; 0.007 mg/l - marine water; 0.0007 mg/l - Intermittent release; 0.0024 mg/l - STP; 830 mg/l - Soil; 0.0348 mg/l - Sediment (Freshwater); 0.195 mg/kg - Sediment (Marinewater); 0.0195 mg/kg

### 8.2. Exposure controls

#### Protective equipment



#### Eye/face protection

No specific eye protection required during normal use. Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. The following protection should be worn: Tight-fitting safety glasses.

#### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. The selected gloves should have a breakthrough time of at least 4 hours. The breakthrough time for any glove material may be different for different glove manufacturers. When used with mixtures, the protection time of gloves cannot be accurately estimated. It is recommended that gloves are made of the following material: Neoprene. Nitrile rubber. Rubber (natural, latex). Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Protective gloves should have a minimum thickness of 0.15 mm. Glove thickness is not necessarily a good measure of glove resistance as the permeation rate will depend on the exact glove composition. The choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Repeated exposure to chemicals will degrade the ability of the glove to provide resistance to chemicals. Specific work environments and material handling practices may vary, therefore safety procedures should be developed for each intended application.

#### Hygiene measures

Wash contaminated skin thoroughly after handling.

#### Respiratory protection

No specific requirements are anticipated under normal conditions of use.

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<b>Environmental exposure controls</b>	Store in a demarcated banded area to prevent release to drains and/or watercourses. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.
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### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Translucent. Liquid.
<b>Colour</b>	White.
<b>Odour</b>	Pleasant, agreeable.
<b>Odour threshold</b>	Not determined.
<b>pH</b>	pH (concentrated solution): 9.0
<b>Melting point</b>	Not determined.
<b>Initial boiling point and range</b>	Not determined.
<b>Flash point</b>	Not determined.
<b>Evaporation rate</b>	Not determined.
<b>Evaporation factor</b>	Not determined.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	Not determined.
<b>Other flammability</b>	Not determined.
<b>Vapour pressure</b>	Not determined.
<b>Vapour density</b>	Not determined.
<b>Relative density</b>	1.0 @ 25°C
<b>Solubility(ies)</b>	Soluble in water.
<b>Partition coefficient</b>	Not determined.
<b>Auto-ignition temperature</b>	Not determined.
<b>Decomposition Temperature</b>	Not determined.
<b>Viscosity</b>	Not determined.
<b>Explosive properties</b>	There are no chemical groups present in the product that are associated with explosive properties.
<b>Oxidising properties</b>	There are no chemical groups present in the product that are associated with oxidising properties.
<b>Comments</b>	Information declared as "Not available" or "Not applicable" is not considered to be relevant to the implementation of the proper control measures.

#### 9.2. Other information

<b>Other information</b>	Not determined.
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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

<b>Reactivity</b>	There are no known reactivity hazards associated with this product.
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### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Not determined.

### 10.4. Conditions to avoid

**Conditions to avoid** There are no known conditions that are likely to result in a hazardous situation.

### 10.5. Incompatible materials

**Materials to avoid** No specific material or group of materials is likely to react with the product to produce a hazardous situation.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Thermal decomposition or combustion products may include the following substances: Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Sulphurous gases (SO<sub>x</sub>). Ammonia or amines. Nitrous gases (NO<sub>x</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** Based on available data the classification criteria are not met.

#### Skin corrosion/irritation

**Skin corrosion/irritation** Based on available data the classification criteria are not met.

#### Extreme pH

Moderate pH (> 2 and < 11.5).

#### Serious eye damage/irritation

**Serious eye damage/irritation** Based on available data the classification criteria are not met.

#### Respiratory sensitisation

**Respiratory sensitisation** Based on available data the classification criteria are not met.

#### Skin sensitisation

**Skin sensitisation** May cause sensitisation or allergic reactions in sensitive individuals.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** Does not contain any substances known to be mutagenic.

#### Carcinogenicity

**Carcinogenicity** Does not contain any substances known to be carcinogenic.

#### Reproductive toxicity

**Reproductive toxicity - fertility** Does not contain any substances known to be toxic to reproduction.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** Based on available data the classification criteria are not met.

#### Specific target organ toxicity - repeated exposure

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<b>STOT - repeated exposure</b>	Based on available data the classification criteria are not met.
<b>Inhalation</b>	Coughing, chest tightness, feeling of chest pressure.
<b>Ingestion</b>	Gastrointestinal symptoms, including upset stomach.
<b>Skin contact</b>	The product contains a small amount of sensitising substance. May cause skin sensitisation or allergic reactions in sensitive individuals. Product has a defatting effect on skin. Prolonged contact may cause dryness of the skin.
<b>Eye contact</b>	May cause discomfort.
<b>Acute and chronic health hazards</b>	May cause skin sensitisation or allergic reactions in sensitive individuals.
<b>Route of exposure</b>	Dermal
<b>Target organs</b>	Skin
<b>Medical symptoms</b>	Allergic rash.
<b>Medical considerations</b>	The following pre-existing or historic medical conditions of the worker may lead to an increased risk of adverse health effects following exposure to this product: Allergies.

### Toxicological information on ingredients.

#### Amides, C8-18 (even numbers) and C18-unsatd, N,N-bis(hydroxyethyl)

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 5,000.0

Species Rat

ATE oral (mg/kg) 5,000.0

##### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 2,000.1

Species Rat

ATE dermal (mg/kg) 2,000.1

#### Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT)

##### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 53.0

Species Rat

Notes (oral LD<sub>50</sub>) Estimated value.

ATE oral (mg/kg) 53.0

##### Acute toxicity - dermal

ATE dermal (mg/kg) 300.0

##### Acute toxicity - inhalation

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ATE inhalation (vapours 3.0  
mg/l)

### Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

## SECTION 12: Ecological information

Ecotoxicity Not regarded as dangerous for the environment.

### 12.1. Toxicity

#### Acute aquatic toxicity

Acute toxicity - fish Not determined.

#### Chronic aquatic toxicity

Chronic toxicity - fish early life stage Not determined.

#### Ecological information on ingredients.

##### Amides, C8-18 (even numbers) and C18-unsatd, N,N-bis(hydroxyethyl)

#### Acute aquatic toxicity

Acute toxicity - fish LC<sub>50</sub>, 96 hours: 2.4 mg/l, Fish

Acute toxicity - aquatic invertebrates EC<sub>50</sub>, 48 hours: 3.2 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC<sub>50</sub>, 72 hours: 18.6 mg/l, Freshwater algae

#### Chronic aquatic toxicity

Chronic toxicity - fish early life stage NOEC, 28 days: 0.32 mg/l,

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 0.07 mg/l, Daphnia magna

##### Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT)

#### Acute aquatic toxicity

LE(C)<sub>50</sub> 0.001 < L(E)C<sub>50</sub> ≤ 0.01

M factor (Acute) 100

Acute toxicity - fish Estimated value.  
LC<sub>50</sub>, 96 hours: 13 mg/l, Fish

#### Chronic aquatic toxicity

NOEC 0.0001 < NOEC ≤ 0.001

Degradability Non-rapidly degradable

M factor (Chronic) 100

### 12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

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### 12.3. Bioaccumulative potential

**Bioaccumulative potential** The product does not contain any substances expected to be bioaccumulating.

**Partition coefficient** Not determined.

### 12.4. Mobility in soil

**Mobility** Soluble in water.

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This product does not contain any substances classified as PBT or vPvB.

### 12.6. Other adverse effects

**Other adverse effects** Not determined.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**Disposal methods** Disposal of this product, process solutions, residues and by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any local authority requirements.

## SECTION 14: Transport information

**General** The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

### **Special Provisions note**

#### 14.1. UN number

Not applicable.

#### 14.2. UN proper shipping name

Not applicable.

#### 14.3. Transport hazard class(es)

No transport warning sign required.

#### 14.4. Packing group

Not applicable.

#### 14.5. Environmental hazards

**Environmentally hazardous substance/marine pollutant**  
No.

#### 14.6. Special precautions for user

Not applicable.

#### 14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

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<b>National regulations</b>	Control of Substances Hazardous to Health Regulations 2002 (as amended).
<b>EU legislation</b>	Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
<b>Guidance</b>	Workplace Exposure Limits EH40.

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

<b>Abbreviations and acronyms used in the safety data sheet</b>	<p>PBT: Persistent, Bioaccumulative and Toxic substance.  vPvB: Very Persistent and Very Bioaccumulative.  CAS: Chemical Abstracts Service.  REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.  ATE: Acute Toxicity Estimate.  IMDG: International Maritime Dangerous Goods.  IATA: International Air Transport Association.  ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.  LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).  EC<sub>50</sub>: 50% of maximal Effective Concentration.  NOEC: No Observed Effect Concentration.  DNEL: Derived No Effect Level.  PNEC: Predicted No Effect Concentration.  NOAEL: No Observed Adverse Effect Level.</p>
<b>Classification abbreviations and acronyms</b>	<p>Skin Irrit. = Skin irritation  Eye Dam. = Serious eye damage  Aquatic Chronic = Hazardous to the aquatic environment (chronic)  Acute Tox. = Acute toxicity  Skin Corr. = Skin corrosion  Skin Sens. = Skin sensitisation  Aquatic Acute = Hazardous to the aquatic environment (acute)</p>
<b>Revision comments</b>	NOTE: Lines within the margin indicate significant changes from the previous revision.
<b>Revision date</b>	14/05/2020
<b>Revision</b>	3.0
<b>Supersedes date</b>	24/10/2017
<b>SDS number</b>	28768

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### Hazard statements in full

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H314 Causes severe skin burns and eye damage.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H331 Toxic if inhaled.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

H411 Toxic to aquatic life with long lasting effects.

EUH208 Contains Mixture of 5-chloro-2-methyl-2H- isothiazol-3-one (EINECS 247-500-7) and 2-methyl-2H-isothiazol-3-one (EINECS 220-239-6) (Mixture of CMIT/MIT). May produce an allergic reaction.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.