

1 • IDENTIFICATION OF SUBSTANCES / MIXTURE AND OF THE COMPANY / UNDERTAKING

1:1 Product identifier:

- FirmaHold Fuel Cells For Framing Nailer (High-Pressure)
- Identification of the product: See section 3.
- REACH pre-registration no: See section 3.

1:2 Relevant identified uses of the substances and uses advised against:

- 1:2:1 Identified uses: Combustion
1:2:2 Uses advised against: Not available

1:3 Supplier:

T. I. Midwood & Co. Ltd
TIMco house
Green Lane
Wardle
Nantwich
Cheshire
CW5 6BJ

Telephone: +44 (0)1829 261 111
Fax: +44 (0)1829 261 093

1:4 Emergency Telephone:

+353 41 980 6916

Available outside office hours?

YES NO

2 • HAZARDS IDENTIFICATION

2:1 Classification of substance / mixture:

2:1:1 Classification: The mixture is classified as following according to 1999/45/EC and regulation (EC) No 1272/2008:

| REGULATION (EC) NO 1272/2008 | |
|------------------------------|------------------------|
| Hazard classes / Hazard cat. | Hazard statement codes |
| Press. Gas | H280 |
| Flam. Gas 1 | H220 |

For full text of H- phrases: see section 2:2.

| 1999/45/EC | |
|-------------------------|-----------|
| Hazards characteristics | R-Phrases |
| F+ | R12 |

For full text of R- phrases: see section 16.

2:2 label elements:

Hazard pictograms:



Signal Word (S): Danger

Hazard Statement:

H220: Extremely flammable gas.
H280: Contains gas under pressure; may explode if heated.

Precautionary Statement:

P210: Keep away from heat/sparks/open flames/hot surfaces. - No Smoking.
P377: Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381: Eliminate all ignition sources if safe to do so.
P410 + P403: Protect from sunlight. Store in a well-ventilated place.

3 • COMPOSITION / INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture Ingredients:

| Chemical Name | Pre-Registration No. | CAS No. | EC No. | Concentration |
|---------------|-----------------------|----------|-----------|---------------|
| Propane | 05-2114131914-52-0000 | 115-07-1 | 204-062-1 | 40-90% |
| Butane | 05-2114131909-43-0000 | 106-97-8 | 203-448-7 | 0-15% |
| Isobutane | 05-2118669741-21-0000 | 75-28-5 | 200-857-2 | 15-60% |
| Propane | 05-2114131905-51-0000 | 74-98-6 | 200-827-9 | 0-15% |

4 • FIRST AID MEASURES

4:1 Description of first aid measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4:1:1 In case of inhalation:

If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek medical attention.

4:1:2 In case of skin contact:

Treat burned or frostbitten skin by flushing or immersing the area(s) in lukewarm water. Keep skin warm, dry, and clean. If blistering occurs, apply a sterile dressing. Seek medical attention.

4:1:3 In case of eyes contact:

For contact with the liquified gas, hold eyelids apart and gently flush the affected area(s) in lukewarm water. Seek immediate medical attention.

4:1:4 In case of ingestion:

This material is a gas under normal atmospheric conditions and ingestion is unlikely.

4:2 Most important symptoms and effects, both acute and delayed:

The product is not classified as harmful health effect.

4:3 Indication of any immediate medical attention and special treatment needed:

If skin irritation or rash occurs, get medical advice / attention.

5 • FIRE-FIGHTING MEASURES

5:1 Extinguishing media:

Suitable extinguishing media: Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.
Unsuitable extinguishing media: None

5 • FIRE-FIGHTING MEASURES cont...

5:2 Special hazards arising from the substance or mixture:

This material is flammable and can be ignited by heat, sparks, flames or other sources of ignition (eg: static electricity, pilot lights, or mechanical / electrical equipment, and electronic devices such as mobile telephones, computers, calculators and pagers that have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back or explode. May create vapor / air explosion hazard indoors, in confined spaces, outdoors or in sewers. If container is not properly cooled, it can rupture due to pressure buildup.

5:3 Special fire fighting methods and special protective actions for fire-fighters:

If necessary, equipped with isolated style protective mask and full protective clothing.

6 • ACCIDENTAL RELEASE MEASURES

6:1 Personal precautions, protective equipment and emergency procedures:

6:1:1 For non-emergency personnel:

Use personal protective equipment. Ensure adequate ventilation. If insufficient ventilation, wear suitable respiratory equipment. Avoid inhalation of vapour.

6:1:2 For emergency responders:

Wear an appropriate NIOSH / MSHA approved respirator if vapour is generated.

6:2 Environmental Precautions:

Do not discharge into the sewage / drainage systems.

6:3 Methods for containing and cleaning up:

Stay upwind and away from spill / release. Notify persons down wind of the spill / release, isolate danger area and keep unauthorised personnel out. Stop spill / release if it can be done with minimal risk. Wear appropriate protective equipment. Water spray may be useful in minimizing or dispersing vapors.

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 information on disposal.

6:5 Additional information:

Not applicable.

7 • HANDLING AND STORAGE

7:1 Precautions for safe handling:

7:1:1 Protective measures:

Practice good housekeeping. Put on appropriate personal protective equipment (see section 8). Do not get in eyes or on skin or clothing. Do not ingest. Use with adequate ventilation. Wash thoroughly after handling.

7:1:2 Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7:2 Conditions for safe storage, including any incompatibilities:

Store in cool, dry well-ventilated area away from heavily trafficked areas and emergency exits. Do not allow the temperature where cylinders are stored to exceed 30°C. Cylinders should be stored upright and firmly secured to prevent falling or being knocked over. Full and empty cylinders should be segregated.

7:3 Specific end use(s):

Not applicable.

8 • EXPOSURE CONTROLS / PERSONAL PROTECTION

8:1 Control parameters:

8:1:1 Occupational exposure limits:

Not available.

8:1:2 Additional exposure limits under the conditions of use:

Not available.

8:1:3 DNEL / DMEL and PNEC-Values:

Not available.

8:2 Exposure controls:

8:2:1 Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice. Wash hands during breaks and at the end of the work. Avoid contact with eyes and skin. Provide safety shower and cleaning eyes equipments.

8:2:2 Individual protection measures, such as personal protective equipment:

• Eye / Face protection:

Wear safety goggles.

• Hand protection:

Wear safety gloves to prevent any possibility of liquid contact and repeated or prolonged vapor contact.

• Body protection:

Protective clothing to prevent any possibility of liquid contact and repeated or prolonged vapor contact.

• Respiratory protection:

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

• Thermal hazards:

Wear suitable protective clothing to prevent heat.

8:2:3 Environmental exposure controls:

Avoid discharge into the environment.

According to local regulations, Federal and official regulations.

9 • PHYSICAL AND CHEMICAL PROPERTIES

9:1 Information on basic physical and chemical properties:

| | |
|---|------------------|
| Appearance | Gaseous |
| Colour | Colourless |
| Odour | Odourless |
| Odour threshold | Not available |
| pH | Not available |
| Melting point / range (°C) | Not available |
| Boiling point / range (°C) | Not available |
| Flash point / range (°C) | Not available |
| Evaporation rate | Not available |
| Flammability limit - lower (%) | Not available |
| Flammability (solid, gas) | Not available |
| Ignition temperature (°C) | Not available |
| Upper / lower flammability / explosive limits | Not available |
| Vapour pressure (25 °C) | 17.8bar / 50 °C |
| Vapour density | Not available |
| Relative Density | Not available |
| Bulk density (kg/m ³) | Not available |
| Water solubility (g/l) | Slightly soluble |
| n-Octano / Water (log Po/w) | Not available |
| Auto-ignition temperature | Not available |
| Decompression temperature | Not available |
| Viscosity, dynamic (mPa.s) | Not available |

9 • PHYSICAL AND CHEMICAL PROPERTIES cont...

| | |
|----------------------|---------------|
| Explosive properties | Not available |
| Oxidising properties | Not available |
| Molecular formula | Not available |
| Molecular weight | Not available |

9:2 Other information:

| | |
|--|------------------------------------|
| Fat solubility (solvent - oil to be specified) etc | Slightly soluble in alcohol, ether |
| Surface tension | Not available |
| Dissociation constant in water (pKa) | Not available |
| Oxidation-reduction potential | Not available |

10 • STABILITY AND REACTIVITY

10:1 Reactivity:

The substance is stable under normal storage and handling conditions.

10:2 Chemical stability:

Stable at room temperature in closed containers under normal storage and handling conditions.

10:3 Possibility of hazardous reactions:

No dangerous reactions known.

10:4 Conditions to avoid:

Incompatible materials. Avoid high temperatures. Avoid all possible sources of ignition.

10:5 Incompatible materials:

Avoid contact with strong oxidizing agents.

10:6 Hazardous decomposition products:

Carbon oxides, water.

11 • TOXICOLOGICAL INFORMATION

11:1 Toxicokinetics, metabolism and distribution:

| | |
|------------------------------|---------------|
| Non-human toxicological data | Not available |
|------------------------------|---------------|

11:2 Information on toxicological efforts:

Acute toxicity:

| | |
|------------------------|---------------|
| LD50 (Oral, Rat) | Not available |
| LD50 (Dermal, Rabbit) | Not available |
| LC50 (Inhalation, Rat) | Not available |

| | |
|-----------------------------------|----------------|
| Skin corrosion / irritation | Not classified |
| Serious eye damage / irritation | Not classified |
| Respiratory or skin sensitization | Not classified |
| Germ cell mutagenicity | Not classified |
| Carcinogenicity | Not classified |
| Reproduction toxicity | Not classified |
| STOT - single exposure | Not classified |
| STOT - repeated exposure | Not classified |
| Aspiration hazard | Not classified |

12 • ECOLOGICAL INFORMATION

Toxicity

| ACUTE TOXICITY | | TIME | SPECIES | METHOD | EVAL. | REMARKS |
|----------------|-----|------|---------|----------|-------|---------|
| LC50 | N/A | 96h | Fish | OECD 203 | N/A | N/A |
| EC50 | N/A | 48h | Daphnia | OECD 202 | N/A | N/A |
| EC50 | N/A | 72h | Algae | OECD 201 | N/A | N/A |

| | |
|--------------------------------|---------------|
| Persistence and degradability | Not available |
| Bioaccumulative potential | Not available |
| Mobility and soil | Not available |
| Results of PBT&vPvB assessment | Not available |
| Other adverse effects | Not available |

13 • DISPOSAL CONSIDERATIONS

13:1 Waste treatment methods:

The material should be disposed of by incineration in a chemical incinerator in compliance with national and regional requirements.

13:2 Product / Packaging disposal:

If empty container retains product residues, all label precautions must be observed. Return for reuse or dispose according to national or local regulations.

14 • TRANSPORT INFORMATION

| | LAND TRANSPORT (ADR / RID) | SEA TRANSPORT (IMDG) | AIR TRANSPORT (ICAO / IATA) |
|--|-------------------------------|-------------------------|--------------------------------|
| UN-Number | UN1950 | UN1950 | UN1950 |
| UN Proper shipping name | Aerosols, Flammable | Aerosols, Flammable | Aerosols, Flammable |
| Transport hazard class | 2.1 | 2.1 | 2.1 |
| Packaging group | - | - | - |
| Environmental hazards | No | No | No |
| Special precautions for user | See section 2.2 | See section 2.2 | See section 2.2 |
| Transport in bulk according to Annex II of MARPOL 73/78 and IBC code | - | - | - |

15 • REGULATION INFORMATION

15:1 Safety, health and environmental regulations / legislation specific for the substance or mixture:

| | |
|---|---|
| Relevant information regarding authorisation. | Not applicable |
| Relevant information regarding restriction. | Not applicable |
| Other EU regulations | Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals. |
| Other national regulations | Not applicable |

15 • REGULATION INFORMATION cont...

Chemical Safety Assessment carried out?

YES NO

16 • OTHER INFORMATION

16:1 Indication of changes:

Version 1.0 Amended by EU No 453/2010

16:2 Relevant R-phrases (number and full text:

R12 Extremely flammable

16:3 Training instructions:

Not applicable.

16:4 Further information:

This information is based upon present state of our knowledge. this safety data sheet has been compiled and is solely intended for this product.

16:5 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this safety data sheet, or in combination with any other product or process, is the responsibility of the user.