For the manufacture of pipe purging dams, Argweld® Water Soluble Weld Purge Film® and Argweld® Super Weld Purge Adhesive® is now available.

This manufactured product comes in a kit comprising a 20 metre length of 1 metre wide film, folded in half and wound on a spool, two bottles of the adhesive, a slitting knife to quickly cut the dams and a comprehensive manual with instructions for use with hints and tips for weld purging.

The use of Argweld® Water Soluble Weld Purge Film® for manufacture of purging dams is well proven and the Argweld® Water Soluble Weld Purge Film® gives superior results over all other water soluble products.

It can be used for stainless, duplex and chrome-moly steels as well as titanium.

The Argweld® Water Soluble Weld Purge Film® material makes dams which produce an impenetrable purge barrier but which can easily be washed away when hydrostatically testing the pipe or just by normal wash out.

The product dissolves away completely without leaving any fibres to clog up filters or other sensitive parts in a system and it is strong in all directions so that it can maintain a good gas barrier throughout the purging process.

Trace element certification can be provided to show that Argweld® Water Soluble Weld Purge Film® does not contain any harmful elements and that the quantity of halides is well below the permissible levels.

The Argweld® Water Soluble Weld Purge Film® and Water Soluble Super Adhesive® are completely biodegradable and all packaging materials are recyclable.
YOUR FREE SAMPLE PACK
Please find attached your complimentary sample of our Argweld® Water Soluble Weld Purge Film®.

Argweld®
Water Soluble
Weld Purge Film®

If your sample is missing, or for more information, please contact HFT® or your local distributor.

PARTIAL USER LIST
ABB Kent Taylor, UK
AB Contract Welding Services, UK
Al Bahar Jacorossi Engineering, Saudi Arabia
Alpha Plus Pipework Services, UK
Babcock Construction, UK
Banfield Engineers Company Limited, UK
Born Heaters, UK
BP Oil Refinery, UK
Brewchem International, UK
G R Carr, UK
China Light, China
Consolidated Controls Inc., USA
Electraweld, UK
Elmbridge Supply Company, UK
Esso Refinery, UK
FAS, Scotland
Framatome, USA
Genex Inc, USA
Gladwell Contracting Services, UK
Haden Young, UK
Hanto International Co Limited, Korea
HFT, USA
Hi Line Services, UK
Kodak, UK
Krentak, Norway
Lakers Process Plant, UK
Ledwood Construction, UK
Lenweld, UK
Linden Industrial, UK
Marine and General Engineers
Mars, UK
McVitie, UK
McCall, Australia
Nestle, UK
Northeast Airgas Inc., USA
Pipetawse Limited, UK
Petrotec, UAE
Plant Construction, USA
Riverside Engineering, USA
Rywal, Poland
Scomark, UK
Shawton Engineering Limited, UK
Solonvale Limited, USA
Stockport Engineering, UK
Stainless Metalcraft Limited, UK
Thomas A Metcalfes, UK
Tudor Machanical Services Ltd, UK
Ultra Welding Equipment, UK
U Max, UK
Unamon, Brazil
Weldtech Engineers, India
Weldtech Industrial Services, UK
Weldwell Speciality PVT, India
Yateem, Bahrain

Also included in this sample pack is a list of our most frequently asked questions, a partial list of regular users of this product, a chemical analysis document, material safety data sheet, and a reproduction of an article included in the magazine “Stainless Steel Focus”, issue 136.

If you would like more information, or a quotation of our current prices, please do not hesitate to contact your local distributor. Alternatively, please contact us, contact information is on the last page.

This product is used world-wide, with a sample representative of organisations using this product shown. Of course, this is only a partial list of users, with many more asking us not to name them.
Inorganics:

Halides  no contents present or measured
Lead   fewer than 1 ppm
Copper fewer than 5 ppm
Zinc    fewer than 5 ppm
Sulphur no Sulphur present or measured

PH of solutions:

2% solution (2 parts PVOH film, 98 parts water)
\( \text{pH} = 7.18 \)

4% solution (4 parts PVOH film, 96 parts water)
\( \text{pH} = 6.38 \)

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the product described or their suitability for a particular application.
SECTION 1  PRODUCT IDENTIFICATION
Argweld® Water Soluble Weld Purge Film®
Polyvinyl Alcohol films. Synonyms: PVA, PVOH.

SECTION 2  HAZARDOUS COMPONENTS
Not applicable.

SECTION 3  PHYSICAL DATA
Appearance: Thin, transparent film.
Boiling point: Not applicable.
Vapour density: Not applicable.
Solubility in water: Dependent on water type, either rapid solubility in cold water to rapid solubility at 60°C (140°F).
Melting point: Approx 160 - 220°C (320 - 428°F).
Density, g/cm³: Approx 1.25 (dependent on relative humidity).
Percent volatiles: 5 - 15% water vapour dependent on humidity.

SECTION 4  FIRE AND EXPLOSION DATA
Flash point: None.
Extinguishing agents: Water, CO₂.
Hazardous combustion products: Possible carbon monoxide if low oxygen.

SECTION 5  SPILL OR LEAK PROCEDURES
Not applicable.

SECTION 6  REACTIVITY DATA
Not applicable.

SECTION 7  HEALTH HAZARD DATA
Effects of overexposure:
Inhalation: Not applicable.
Eye contact: No irritation.
Skin contact: No irritation.
Ingestion: No known problems, product is non-toxic.
Emergency and first aid:
Inhalation: Not applicable.
Eye contact: Remove from contact, flush with clean water.
Skin contact: Not applicable.
Ingestion: Seek medical assistance and show this document.

SECTION 8  PROTECTION INFORMATION
Not applicable.

SECTION 9  PRECAUTIONARY LABELLING
Not applicable.
1. I want to see the weld root to view how it is forming and progressing. Can I do that with Argweld® Water Soluble Weld Purge Film®?

Yes, the Argweld® Water Soluble Weld Purge Film® is transparent, which allows welders or their assistants to see the weld root clearly during welding.

2. Why should I use Argweld® Water Soluble Weld Purge Film®, rather than other similar products in the market place?

There are several reasons to use Argweld® Water Soluble Weld Purge Film®, some of which are:

- It allows welders to see the weld root as the weld is progressing.
- Film does not contain water, like the paper option, so there is no water near the vicinity of the weld that might oxidise the weld or cause porosity.
- It arrives as a complete kit with film, Argweld® Water Soluble Super Adhesive®, Safety Knife and User Instruction Manual.
- The price is significantly lower than other water soluble products.
- Argweld® Water Soluble Weld Purge Film® Kits are purposely developed and manufactured for the Pipe Welding industries.
- Huntingdon Fusion Techniques HFT® and your nearest distributor keep large volumes of Argweld® Water Soluble Weld Purge Film® in stock at all times, so you will never be left half way through a job without supplies.

3. Can I use Argweld® Water Soluble Weld Purge Film® in a paper and pulp manufacturing plant?

Yes. There are no harmful ingredients that will affect the paper making process. Our chemical analysis report is available on request.

4. Will Argweld® Water Soluble Weld Purge Film® burn?

Argweld® Water Soluble Weld Purge Film® does not ignite if the temperature becomes too hot.

5. Can you tell me about the Halides in the film and their levels?

We can provide a Chemical Analysis document to show that the level of halides in the Argweld® Water Soluble Weld Purge Film® is lower than the minimum levels.

These are below the levels that cause concern in the nuclear industry, for example.

6. How do I fix Argweld® Water Soluble Weld Purge Film® inside pipes?

We supply Argweld® Weld Purge Super Adhesive® and comprehensive instructions explaining how a purge film adhesive dries and fixes the purge film dam much better inside pipes. We also have a video presentation to show how to prepare and use the film dams.

HFT® Film dams will never come loose in a pipe accidentally and cause you to lose purge and even cause a weld cut out.

7. I have tried using paper dams and cones do not stick well inside pipes. Will the film work any better?

Argweld® Weld Purge Super Adhesive® fixes the Argweld® Water Soluble Weld Purge Film® dam very securely to the pipe wall and creates an impenetrable barrier until water arrives to wash it away.

8. Where can I obtain Argweld® Water Soluble Weld Purge Film® Kits?

Argweld® Water Soluble Weld Purge Film® is solely and exclusively manufactured by HFT® and can be purchased from our distributors for your area.

9. How soluble are these purging materials?

The Argweld® Water Soluble Weld Purge Film® dissolves completely down to the molecular level. Other water soluble products may only be water ‘dispersible’ as the wood fibers do not dissolve and leave residues which can clog filters.
When stainless steel pipes and tubes, hereafter referred to only as pipes, (and some made of other materials such as chrome moly carbon steel, copper nickel, titanium, etc)are welded together or to fittings, it is desirable to purge the oxygen out of the inside of the material near the weld zone to prevent it from reacting with the hot metal and causing coking, porosity, uneven penetration and so on.

Mostly, argon is used for purging because it is an inert gas and because it is readily available for welding. In some countries it is customary to use nitrogen for some of this work, although it cannot be universally applied for purging as for example it can combine with hot titanium to cause undesirable nitrides of the parent metal.

To obtain a quality purge is not easy and it has been customary to fill the pipe assembly with gas running at what is thought to be a suitable flow rate for an estimated period of time.

In today’s climate of ever improving quality control and increasing demands on procedures with traceability, it is inappropriate to use such hit and miss methods to guarantee a satisfactory purge. Clearly it is better to use specialist products which are made for the purpose of pipe purging.

Some of the specialist products available include purge bladders (see diagram 1 above), solid rubber disc purge dam assemblies (see diagram 2 above) and water-soluble materials for users to manufacture their own dams (see diagram 3 opposite). Bladder and rubber disc assemblies require an open end to enable the assembly to be retrieved after the weld is finished.

Dams made from water-soluble materials can be used for open assemblies and closing welds. Water-soluble materials are available in both plastic and paper forms. The paper product may leave relatively large fibres after dissolving and they can cause filters to become blocked.

Furthermore paper is becoming increasingly expensive and ecologically undesirable so the water-soluble plastic would seem to be the purging product of the future.

A British made water-soluble plastic is available for the purpose of making dams for the purging of pipe welds and this is made from a PVOH (polyvinyl alcohol) film at thickness of 35 microns.

This material is truly biodegradable and analysis by infrared spectrometry shows the absolute minimum of residual inorganic products after dissolving in water. This material has been approved by the American Food and Drugs Administration (FDA) for the wrapping of foodstuffs.

The material can be rolled out onto a worktable and a disc with a diameter 2 inches (50mm) or so larger than the pipe to be purged can be cut. For pipe diameters of less than 20 inches (0.5 meter), one cut will give two dams.

A cardboard former just a little bit smaller than the pipe diameter can be cut as shown in diagram 5 below, and used to place the dams inside the open pipe end. The pipe ends will have been cleaned beforehand to be free from dirt or grease, etc and some of the water-soluble adhesive wiped around the inside of the pipe where the dam is to be situated.

The cardboard former helps guide the dam into place and the excess material can be stuck down on the previously applied adhesive. Once one of these dams had been placed either side of the joint line, the assembly can be moved together and clamped or tacked ready for welding.

Because argon is heavier than air it is best to arrange for the argon to enter the purge cavity at the bottom at a flow rate of 10 litres a minute or less, to avoid turbulence and prevent the argon mixing with the air. The gas exit hole should be at the top of the interspace to ensure that the whole cavity is filled with argon and all oxygen removed.

As the weld draws to its end, the gas flow will be reduced to a minimum to prevent the molten weld root from being blown outwards. For absolute certainty that the oxygen level has been reduced to an acceptable content, usually 1% or less for stainless steel welding, it is advisable to connect a purge monitor to the exhaust area.

This will ensure that time and gas are not wasted by arbitrary selection of purging times (see diagram on next page).
After welding, once the material had cooled sufficiently and the purge gas hoses withdrawn, the dams can be washed away with water. In some cases the pipework will be hydrostatically tested which involves filling it up with water in any case. In other cases the pipework will need to be washed out prior to use to ensure that all contaminating materials are removed. Whilst the PVOH material dissolves readily in cold water, it will dissolve faster in hot water or steam. This British made water-soluble plastic has already been used widely throughout the world on major welding projects, one of which was the Sizewell B PWR nuclear reactor for power generation. Other users include dairies, food manufacturing facilities, shipyards, refineries, oil production platforms, breweries, chemical plants and so on.

This means that the welder has a new low cost, easy to use material for any stainless steel weld whether it be for new plant or repair, maintenance and extension of existing ones.
Water Soluble Weld Purge Film®

SAMPLE PACK

Other HFT® Weld Purging Products
Argweld® Inflatable Tube Pipe & Pipeline Weld Purging Systems
Argweld® PurgEye® Weld Purge Monitors®
Argweld® Weld Purge Film® & Weld Purge Super Adhesive®
Argweld® Weld Backing Tape™ & Weld Purge Tape™
Argweld® Weld Trailing Shields®
Argweld® Flexible Welding Enclosures®
Argweld® Weld Purge Plugs™ & Orbital Welding Plugs
Techweld® MultiStrike® Tungsten Electrodes

Our HFT Pipestoppers® Division
Nylon, Aluminium, Steel and Rubber Pipe Plugs and Inflatable Stoppers