ProtectaFlex Detect

Flexible double containment solution

aliaxis

Summary

Aliaxis Group

As a leader in advanced plastic pipe systems for building, infrastructure, industry and agriculture applications, we support our customers and partners in setting up all types of water management projects, offering solutions to make networks and plants secure and cost-effective.

We offer specific solutions that meet our customers' most demanding needs across the globe. Aliaxis is active through leading local brands and operating in over 40 countries, combining local solutions with global innovation and operational excellence.

Aliaxis provides a range of solutions that meet the complex and varied pipework requirements in industrial water and wastewater treatment. We offer versatile products that transport chemicals safely and ensure a long service life.

Aliaxis is a global leader in advanced fluid management solutions that enable access to water and energy.

€4.1 bN
Revenue*

More than 80
manufacturing plant

More than 120
distribution center

More than 15 500
employees

Aliaxis is a private company headquartered in
Belgium

*Revenue 2023

Enhanced safety
with Double Containment Solutions

Experience heightened protection against risks to both people and the environment with our double containment system.

Our recommended solutions effectively prevent the unnoticed escape of hazardous liquids from pipe systems.

Discover Aliaxis' Product range and the advantages of ProtectaFlex Detect, our featured Double Containment flexible pipe that guarantees reliability, safety and quick installation for the transport of dangerous fluids.

ProtectaFlex Detect Flexible Double Containment

The fear of aggressive chemicals getting into the environment through undetected leaks was the reason for developing the double containment system. With ProtectaFlex Detect, this fear can be all but eradicate.

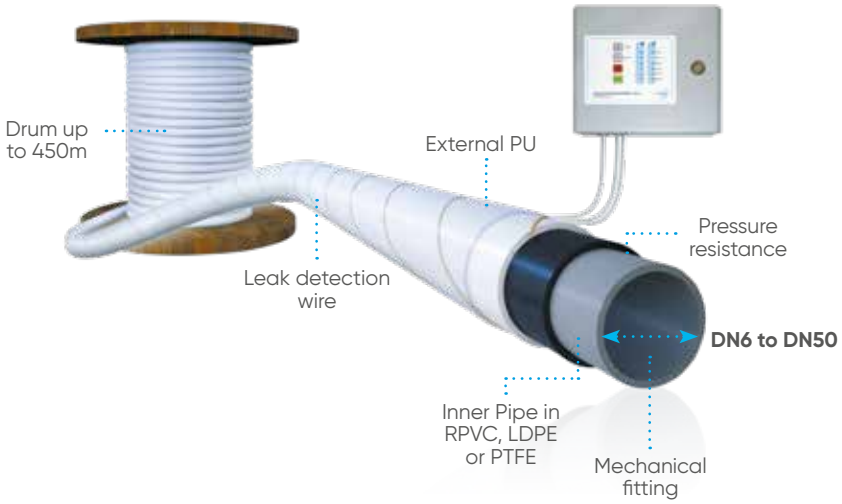
ProtectaFlex Detect is a flexible double contained flexible pipe system: its unique design gives it a strong resistance to pressure and chemical attack, while offering a high level of reliability in the event of a leak.

By adopting safety and environmental protection measures using our ProtectaFlex Detect system, your company is part of a sustainable and efficient development strategy.

An unique Design

ProtectaFlex Detect is made up of a primary pipe made in RPVC, LDPE or PTFE in contact with the medium, surrounded by a reinforced PU layer for pressure resistance.

Beside being a flexible double containment solution, one of the main characteristics of ProtectaFlex Detect is having two copper wires around the primary pipe.



In the event of a leak, the fluid enters the interstitial space and causes a short circuit between copper wires. By connecting these wires to the system of dosage and distribution, it is possible to immediately interrupt circulation to prevent any risk of contamination and exposure.

The leak detection system requires only a minimal quantity of liquid to trigger the alarm and shut-off procedure. The leaking liquid is contained in the polyurethane jacket for the time it takes for maintenance services to intervene, reducing the risk of environmental damage.

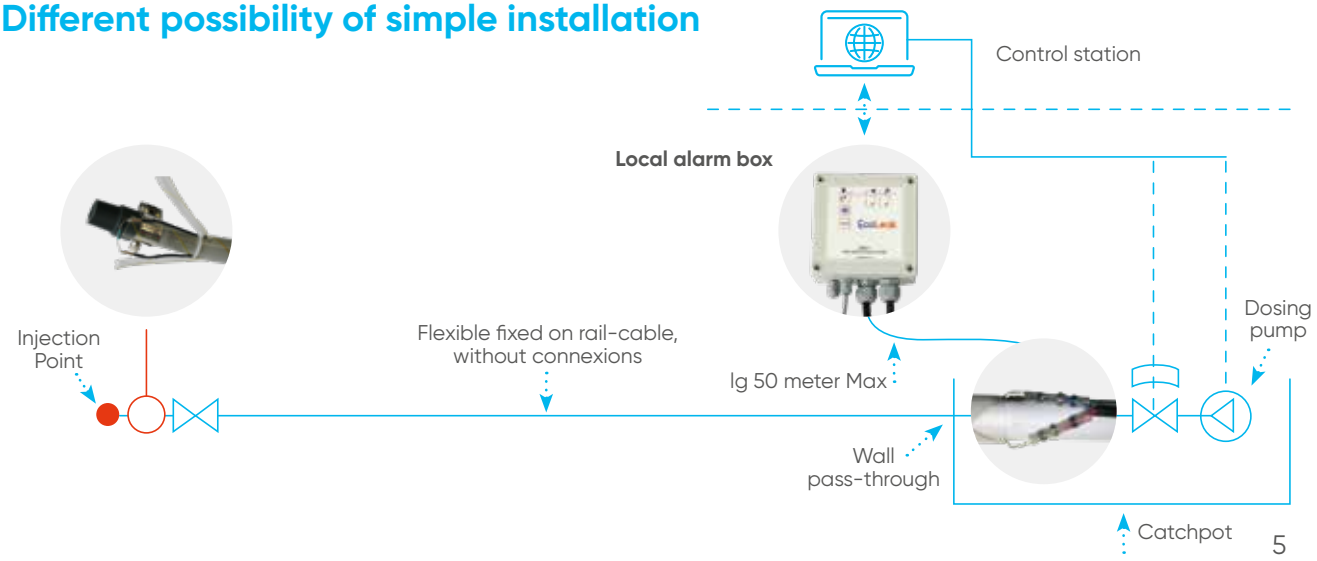
The three available materials offer broad chemical compatibility with different kind of fluids; for this reason ProtectaFlex Detect solution is mainly used in Municipal and Industrial water treatment processes and in Chemical industries plants.

Range is from DN 6 up to DN 50 for RPVC and LDPE, from DN 6 up to DN 25 for PTFE material.

ProtectaFlex Detect is supplied in crowns and drums up to 450 m in length, allowing sensitive fluids to be distributed over long distances without connection, which limits the risk of leakage and guarantees the safety of operators and the protection of the environment.

Connections are made by mechanical crimping with screwing or solvent welding.

Different possibility of simple installation



Features and benefits

- Flexible pipe with reduced bending radius.
- Easier to handle and install than traditional pipe in pipe systems.
- Fittings can be crimped, providing a complete coupling, eliminating the need for costly bespoke fittings in traditional systems. Only one standard fitting required per end.
- Solution lighter (up to 48%) and more compact than traditional systems, resulting in reduced transport and packaging costs.
- Reduced shipping and storage costs, this means reduced carbon footprint.
- Reduced and fully recyclable packaging, with reduced carbon footprint.
- Designed catch pot systems allow the contents of the containment to be contained within it.
- Choice of metering pipe materials, defined by service conditions.
- Pipes can be wired directly to control panel or via a local alarm box, for instant shutdown and alarm.
- Immediate visual and audible alarm once the system is triggered by a chemical leak or system cable failure (when used in conjunction with the alarm box).
- Reduced risk of environmental exposure because chemical leaks are minimal and contained. This makes it possible to eliminate intermediate catchpots.
- As there are no excess chemicals to dispose of in the external containment pipes, cleaning and pipe replacement are quicker and safer.
- Supplied with an easy-to-use end assembly kit (called: "End of Line Kits") containing heat-shrink connectors, connecting cable and end of line kit with shrink connectors and resistor.
- Available with alarm box (optional) - One alarm box can manage up to six pipes.

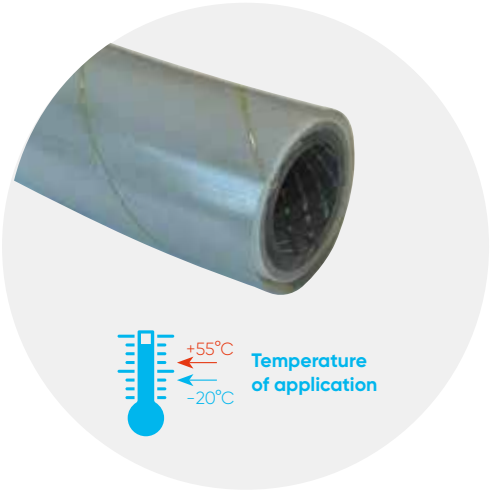
Inner pipe materials

We are able to offer a different selection of inner pipe materials according to the different kind of applications in which a double containment solution is needed for safety reason.

Every material has different features and chemical resistance to medium.

Reinforced PVC Inner pipe (RPVC)

Networks conveying sensitive fluids are made of double containment flexible pipe with coextruded primer in phthalate-free plasticized PVC and ether-based PU UV resistant with reinforcing layers.



The double containment pipe is supplied in continuous, seamless lengths. For lengths over 25 m, the hose will be delivered on a reel to facilitate installation.

Connections are made by mechanical crimping with screwing or solvent welding.

Accidental leak detection must be instantaneous, using 2 conductors inserted between the primary and secondary.

An "end-of-line" kit enables looping through using an 82 K Ohm resistor and connection to an "ECO LEAK" alarm box.

This solution eliminates the need for retention tanks.

Applications

- Fluid and Chemical Transport
- Fluid and Water Management
- Chemical Labs
- Food Industry

Features & benefits

- Silicone & cadmium free
- Good UV resistance
- Smooth bore allowing excellent flow rate

Chemical Resitance

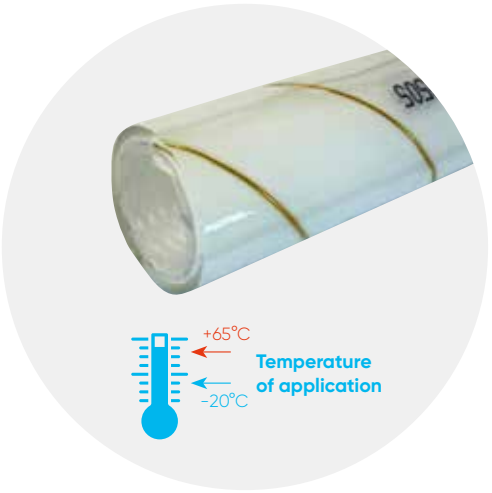
- Oxidising agents
- Reducing agents
- Dilute acids
- Dilute alkalis

LDPE Inner pipe

Networks conveying sensitive fluids will be made of double containment flexible pipe with coextruded primer in transparent LDPE (low-density polyethylene) and a reinforcing layer in transparent UV-resistant ether-based PU.

The double containment pipe hose is supplied in continuous, seamless lengths. For lengths over 25 m, the hose will be delivered on a reel to facilitate installation.

Connections are made by mechanical crimping with screwing or solvent welding.



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Applications

- Fluid and Chemical Transport
- Fluid and Water Management
- Chemical Labs
- Food Industry

Features & benefits

- Suitable for food use
- Chemically inert
- Plasticizer free

Chemical Resitance

- Solvents
- Alkalis
- Oils
- Greases
- Petroleum products
- Dilute acids (mineral & organic)

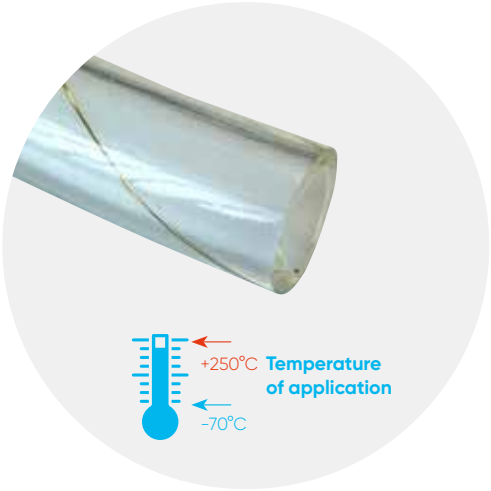
PTFE Inner pipe

Networks conveying sensitive fluids will be made of double containment flexible pipe with white PTFE primerand a reinforcing layer in trasparent UV-resistant PU.

The double containment pipe will be supplied in continuous, seamless lengths.

For lengths over 25 m, the hose will be delivered on a reel to facilitate installation.

Connections are made by mechanical crimping with screwing fittings.



Accidental leak detection must be instantaneous, using 2 conductors inserted between the primary and secondary pipes.

An "end-of-line" kit enables looping through using an 82 K Ohm resistor and connection to an "ECO LEAK" alarm box.

This solution eliminates the need for retention tanks.

Applications

- Transport of fluids and aggressive chemicals
- Fluid and water handling
- Chemical laboratories
- Food industry

Features & benefits

- Suitable for food use
- Non-hardening & non-stick
- Plasticizer free
- Low permeability
- Excellent friction co-efficient

Chemical Resitance

- Almost universally inert o industrial chemicals and solvents
- Can handle virtually any corrosive material in use today
- Low peremeability

Pressure and temperature tables for ProtectaFlex Detect

The mechanical strength of ProtectaFlex Detect pipes is characterized by burst and maximum operating pressure. These pressures change according to temperature and diameters of the hose.

Following data provide a guide to the theoretic pressure capabilities.

Any increase in temperature above 20°C will result in a decrease in the short term burst pressure. The short term burst pressure is defined as the value recorded when testing a pipe from zero to burst pressure, in a single uninterrupted process.

We strongly advise you do not exceed the recommended temperature range.

As the temperature falls the pipe will become less flexible.

Pressure vs Temperature - RPVC pipe

Temperature	Pressure Type	RPVC pipe size							
		6.3 x 11.5	10 x 16	12.5 x 18.5	19 x 26	25 x 32	32 x 42	38 x 48	50 x 62
20°C	**BP**	64,0	60,0	60,0	40,0	40,0	40,0	40,0	32,0
	WP	16,0	15,0	15,0	10,0	10,0	10,0	10,0	8,0
25°C	**BP**	60,2	56,4	56,4	37,6	37,6	37,6	37,6	30,1
	WP	15,0	14,1	14,1	9,4	9,4	9,4	9,4	7,5
30°C	**BP**	54,4	51,0	51,0	34,0	34,0	34,0	34,0	27,2
	WP	13,6	12,8	12,8	8,5	8,5	8,5	8,5	6,8
35°C	**BP**	49,3	46,2	46,2	30,8	30,8	30,8	30,8	24,6
	WP	12,3	11,6	11,6	7,7	7,7	7,7	7,7	6,2
40°C	**BP**	45,4	42,6	42,6	28,4	28,4	28,4	28,4	22,7
	WP	11,4	10,7	10,7	7,1	7,1	7,1	7,1	5,7
45°C	**BP**	41,0	38,4	38,4	25,6	25,6	25,6	25,6	20,5
	WP	10,2	9,6	9,6	6,4	6,4	6,4	6,4	5,1
50°C	**BP**	35,2	33,0	33,0	22,0	22,0	22,0	22,0	17,6
	WP	8,8	8,3	8,3	5,5	5,5	5,5	5,5	4,4
55°C	**BP**	31,4	29,4	29,4	19,6	19,6	19,6	19,6	15,7
	WP	7,8	7,4	7,4	4,9	4,9	4,9	4,9	3,9

All pressures are in Bar.
Working pressure is equal to ¼ of Burst Pressure according to ISO 7751 for chemical media.
WP= Working Pressure.
BP=Burst Pressure.

Pressure and temperature tables for ProtectaFlex Detect

Pressure vs Temperature - LDPE pipe

Temperature	Pressure Type	LDPE pipe size							
		6.3 x 11.5	10 x 16	12.5 x 18.5	19 x 26	25 x 33	32 x 42	38 x 48	50 x 62
20°C	**BP**	67	56	48	70	65	55	50	45
	WP	16,8	14,0	12,0	17,5	16,3	13,8	12,5	11,3
25°C	**BP**	57,6	48,2	41,3	60,2	55,9	47,3	43,0	38,7
	WP	14,4	12,0	10,3	15,1	14,0	11,8	10,8	9,7
30°C	**BP**	49,6	41,4	35,5	51,8	48,1	40,7	37,0	33,3
	WP	12,4	10,4	8,9	13,0	12,0	10,2	9,3	8,3
35°C	**BP**	42,9	35,8	30,7	44,8	41,6	35,2	32,0	28,8
	WP	10,7	9,0	7,7	11,2	10,4	8,8	8,0	7,2
40°C	**BP**	36,9	30,8	26,4	38,5	35,8	30,3	27,5	24,8
	WP	9,2	7,7	6,6	9,6	8,9	7,6	6,9	6,2
45°C	**BP**	31,5	26,3	22,6	32,9	30,6	25,9	23,5	21,2
	WP	7,9	6,6	5,6	8,2	7,6	6,5	5,9	5,3
50°C	**BP**	26,8	22,4	19,2	28,0	26,0	22,0	20,0	18,0
	WP	6,7	5,6	4,8	7,0	6,5	5,5	5,0	4,5
55°C	**BP**	23,5	19,6	16,8	24,5	22,8	19,3	17,5	15,8
	WP	5,9	4,9	4,2	6,1	5,7	4,8	4,4	3,9
60°C	**BP**	20,1	16,8	14,4	21,0	19,5	16,5	15,0	13,5
	WP	5,0	4,2	3,6	5,3	4,9	4,1	3,8	3,4
65°C	**BP**	17,4	14,6	12,5	18,2	16,9	14,3	13,0	11,7
	WP	4,4	3,6	3,1	4,6	4,2	3,6	3,3	2,9

All pressures are in Bar.
Working pressure is equal to ¼ of Burst Pressure according to ISO 7751 for chemical media.
WP= Working Pressure.
BP=Burst Pressure.

Pressure vs Temperature - PTFE pipe

Temperature	Pressure Type	PTFE pipe size								
		4 x 6	5 x 8	6 x 8	8 x 10	9 x 12	10 x 12	12 x 15	19 x 21	25 x 28
20°C	**BP**	84,0	100,0	56,0	42,0	56,0	40,0	52,0	32,0	15,0
	WP	21,0	25,0	14,0	10,5	14,0	10,0	13,0	8,0	3,8
50°C	**BP**	73,1	87,0	48,7	36,5	48,7	34,8	45,2	27,8	10,2
	WP	18,3	21,8	12,2	9,1	12,2	8,7	11,3	7,0	2,6
75°C	**BP**	64,7	77,0	43,1	32,3	43,1	30,8	40,0	24,6	8,5
	WP	16,2	19,3	10,8	8,1	10,8	7,7	10,0	6,2	2,1
100°C	**BP**	57,1	68,0	38,1	28,6	38,1	27,2	35,4	21,8	7,8
	WP	14,3	17,0	9,5	7,1	9,5	6,8	8,8	5,4	2,0
150°C	**BP**	44,5	53,0	29,7	22,3	29,7	21,2	27,6	17,0	6,0
	WP	11,1	13,3	7,4	5,6	7,4	5,3	6,9	4,2	1,5
200°C	**BP**	32,8	39,0	21,8	16,4	21,8	15,6	20,3	12,5	3,5
	WP	8,2	9,8	5,5	4,1	5,5	3,9	5,1	3,1	0,9
250°C	**BP**	23,5	28,0	15,7	11,8	15,7	11,2	14,6	9,0	2,7
	WP	5,9	7,0	3,9	2,9	3,9	2,8	3,6	2,2	0,7

All pressures are in Bar.
Working pressure is equal to ¼ of Burst Pressure according to ISO 7751 for chemical media.
WP= Working Pressure.
BP=Burst Pressure.

ProtectaFlex Detect
Technical Data

RPVC Double Containment

Pipes								
DN (mm) *	**6**	**10**	**12**	**20**	**25**	**32**	**40**	**50**
OD pipe (mm)	11,5	16,0	18,5	26	33	42	48	62
OD Outer pipe (mm) (Polyurethane)	14,5	19,0	21,5	29	36	45	51	65
Bend radius (mm)	45,0	75,0	98,0	136	166	192	250	347
Weight (kg/m)	0,16	0,25	0,29	0,46	0,64	0,95	1,10	1,64
Code	PFD115063PVC	PFD160100PVC	PFD185125PVC	PFD260190PVC	PFD330250PVC	PFD420320PVC	PFD480380PVC	PFD620500PVC

* Tolerance of manufacturing +/- 0,25 mm up to 2 5mm and +/- 0,65 mm up to 50 mm

LDPE Double Containment

Pipes								
Pipe standard	WRAS Approval (WRAS N°1504522)							
DN (mm) *	**6**	**10**	**12**	**20**	**25**	**32**	**40**	**50**
OD pipe (mm)	11,5	16,0	18,5	26	33	42	48	62
OD Outer pipe (mm) (Polyurethane)	14,5	19,0	21,5	29	36	45	51	65
Bend radius (mm)	22,0	37,0	49,0	84	118	175	215	315
Weight (kg/m)	0,14	0,21	0,25	0,38	0,53	0,79	0,91	1,34
Code	PFD115063PE	PFD160100PE	PFD185125PE	PFD260190PE	PFD330250PE	PFD420320PE	PFD480380PE	PFD620500PE

* Tolerance of manufacturing +/- 0,25 mm up to 2 5mm and +/- 0,6 5mm up to 50 mm

PTFE Double Containment

Pipes						
DN (mm)	**6**	**8**	**10**	**12**	**19**	**25**
OD pipe (mm)	8	10	12	14	21	28
OD Outer pipe (mm) (Polyurethane)	11,0	13,0	15,0	17	24	32
Bend radius (mm)	83,0	127,0	184,0	214	506	594
Weight (kg/m)	0,42	0,49	0,54	0,64	0,80	0,98
Code	PFD080060PTFE	PFD100080PTFE	PFD160100PTFE	PFD185125PTFE	PFD260190PTFE	PFD330250PTFE

* Tolerance of manufacturing +/- 0,25 mm up to 2 5mm and +/- 0,6 5mm up to 50 mm

Installation Guidelines
for ProtectaFlex Detect

General recommendations

Do not allow vehicles to drive over the hose when laid out ready for installation.

When pulling through ducts do not use excessive force as this may damage the hose and/or wire in the ProtectaFlex Detect.

Pressure testing should be done after installation and before any trace heating or insulation is installed.

Test pressures exceeding the operating capabilities of the hose are not recommended. If in doubt always check before testing.

We recommend the use of cable ties for installation on cable trays or equivalent, but if they are not correctly installed, they may restrict the ability of fluids to flow through the containment gap.
If you choose to use clamps, please ensure that there is a 5 mm gap between the pipe and the clamp.

Also, we recommend spacing clamps every 1 metre for horizontal supports and and 0.5 metres for vertical supports.

Before testing ensure the pipe is at ambient temperature. If it has been installed in concrete ducts etc. and left in the sun it could be at too high a temperature to pressure test without causing excessive expansion. Let water flow through for enough time to allow the pipe to return to ambient temperature.

Do not exceed the stated minimum bend radius of the pipe.

How to Peel Back PF Detect

Follow these simple steps when you need to peel back the hose to insert fittings.

Equipment needed

- Marker pen
- Box cutter
- Small screwdriver
- Long nose pliers
- Cut resistant gloves

Step 1

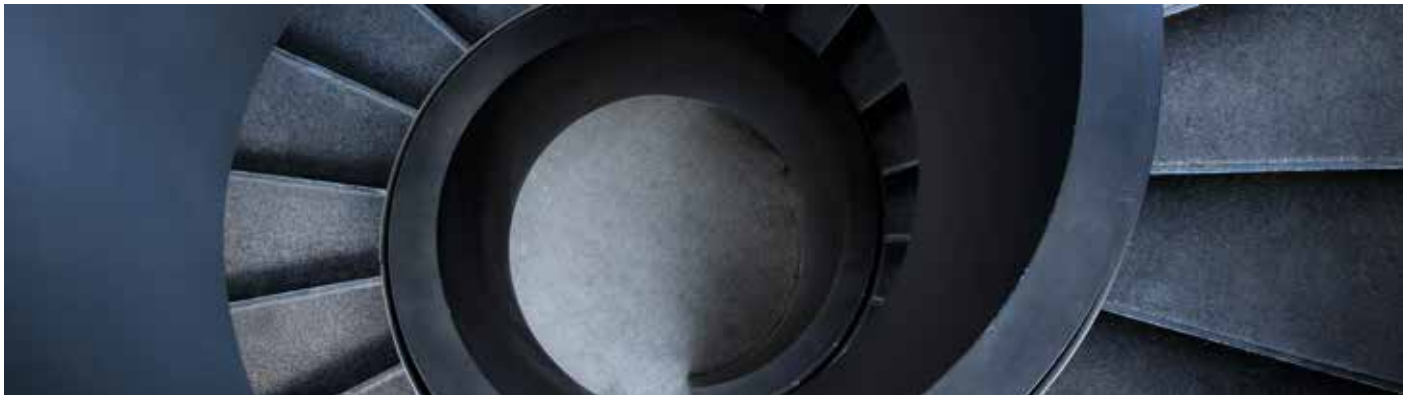
Mark a ring around the hose approximately at a point which is 2 to 2 ½ times the depth of the fitting. Mark 4 points around the hose where you will score it.

Step 2

Using a sharp box cutter score the outer PU cover approximately 0.5mm deep (you want to avoid damaging the inner hose). 10mm from the end of the hose, go right the way through. Repeat this at each mark.

Step 3

Using a small screwdriver, ease up the end of the outer PU cover.



Step 4

Using long nose pliers, grip the end and roll the PU back to the mark.
Repeat this until all the outer is peeled back.

Step 5

Ensure the copper wire is still intact and not damaged. The inner hose will be undamaged.
Use the box cutter to trim the ends.

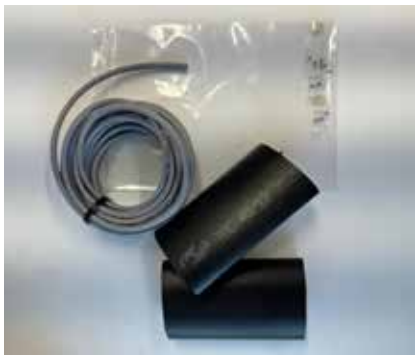
Step 6

Carefully trim the end of the hose where you cut right through to ensure there's no damage to the end of the hose.

Step 7

Slide on the stainless steel band clamp, then insert the fitting and tighten the clamp.

Fitting the Resistor to the End of the Hose

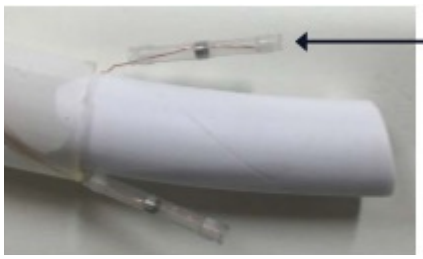


Termination Kit

End of line kit required to connect both cable ends. KITS models with associated pipe diameter:

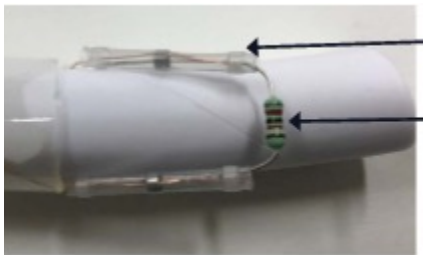
- 2 heat-sealable connectors
- 1 connection cable
- 1 end-of-line kit with 2 heat-sealable connectors, 1 resistor and 2 heat-shrinkable sheaths

Step 1



Slide a small solder sleeve (A1) on to each exposed length of wire.

Step 2

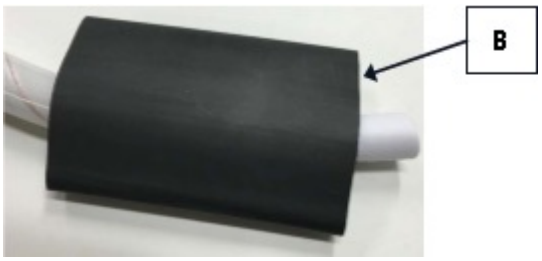


Insert the 82k Ω resistor (C) into the ends of the solder sleeves ensuring the ring of solder is in contact with all of the wires.

Step 3

Heat the sleeves until they have shrunk completely and the solder rings have melted and flowed. Keep the heat source moving to avoid charring. Do not move the joint until it has cooled as this may weaken the joint.

Step 4



Insert the hose into the heat shrink tube (B), ensuring it covers the end of the resistor and all exposed sensor wire.

Step 5

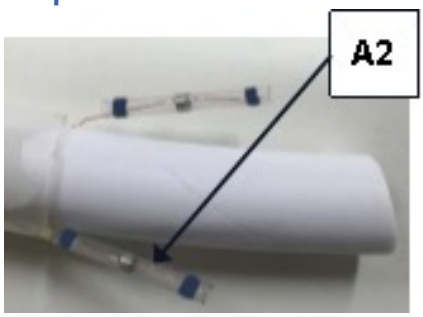
Heat until the heat shrink tube has fully shrunk and is smooth. Keep the heat source moving to avoid charring.

Step 6

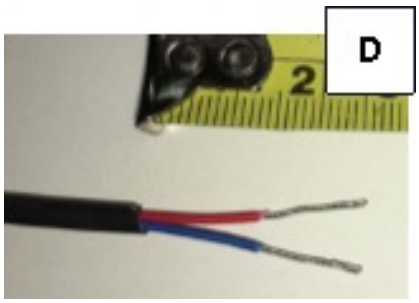
Inspect the exposed adhesive where the hose and tube join. This small bead of exposed adhesive creates the seal. Allow to cool completely.

Connecting the Sensor Wires to the 2-Core Leader Cable

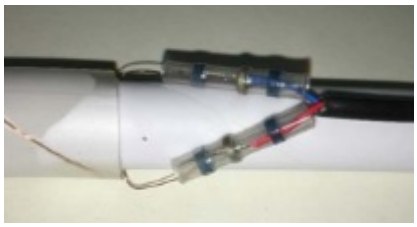
Step 1



Slide a large solder sleeve (A2) on to each exposed length of wire. Cut away 50 mm of the black outer sleeve on the leader cable and trim 10mm to expose the strands (D).

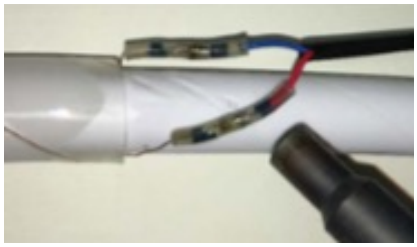


Step 2



Slide the leader cable wires into the solder sleeves (no polarity).

Step 3

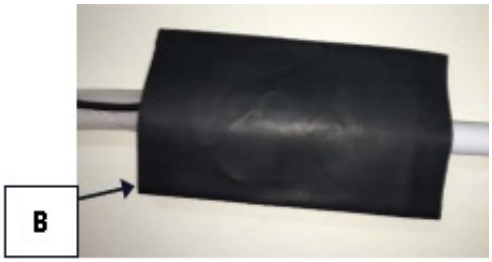


Heat the sleeves until they have shrunk completely and the solder rings have melted and flowed. Keep the heat source moving to avoid charring. Do not move the joint until it has cooled, this may weaken the joint.

Step 4

Position the leader cable as shown. Either tape or hold in place.

Step 5



Insert the hose into the heat shrink tube (B), ensuring it covers the end of the resistor and all exposed sensor wire.

Step 6

Heat until the heat shrink tube has fully shrunk and is smooth. Keep the heat source moving to avoid charring. Inspect the exposed adhesive where the hose and tube join. This small bead of exposed adhesive creates the seal. Let the entire connector area cool before handling.

ProtectaFlex Detect
fittings and accessories

ProtectaFlex Detect is not only a compact and a light double containment solution, but another important added feature is its easy and quick installation on site.

In our range, we are able to offer connection through threaded or solvent welding methods.

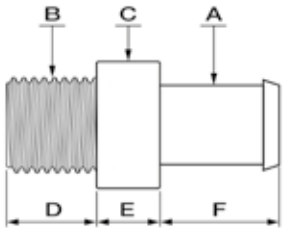
Solvent welding or BSP threaded PVCU fittings and BSP threaded PTFE are available for all sizes for on-site installation using a steel collar.

ProtectaFlex Detect solution must be used and connected exclusively with the fittings recommended and specified in the following pages. The use of unauthorized and different components may compromise the system warranty.

Fittings for PVC and LDPE pipe

Threaded PVC fittings

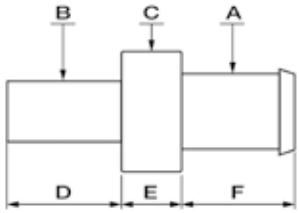
OD - A x B (Thread)	C	ID	D	E	F	Code	Material
6,3 x ½"	25	3,5	20	15	30	PFXAFV060050	PVC U
10 x 1/2"	30	6,5	20	15	30	PFXAFV100050	PVC U
12,5 x 1/2"	30	8,5	20	15	30	PFXAFV125050	PVC U
19 x 3/4"	40	13	25	15	30	PFXAFV190075	PVC U
25 x 1"	40	18,5	30	20	40	PFXAFV250100	PVC U
32 x 1 1/4"	50	22	35	20	40	PFXAFV320125	PVC U
38 x 1 1/2"	50	26	40	20	45	PFXAFV380150	PCV U
50 x 2"	70	38	40	20	45	PFXAFV500200	PVC U



Suitable for PE as well as PVC (depending on pipe material) - please contact us for other connection materials

Solvent PVC fittings

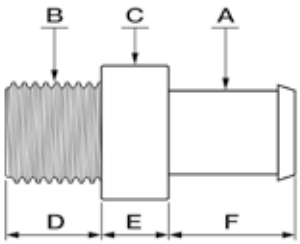
OD - A x B	C	ID	D	E	F	Code	Material
6,3 x 20	25	3,5 mm	20	15	30	PFXAIV060200	PVC U
10 x 20	30	6,5 mm	20	15	30	PFXAIV100200	PVC U
12,5 x 20	30	8,5 mm	20	15	30	PFXAIV125200	PVC U
19 x 25	40	13,0 mm	25	15	30	PFXAIV190250	PVC U
25 x 32	40	18,5 mm	25	20	40	PFXAIV250320	PVC U
32 x 40	50	22,0 mm	30	20	40	PFXAIV320400	PVC U
38 x 50	50	26,0 mm	35	20	45	PFXAIV380500	PVC U
50 x 63	70	38,0 mm	40	20	45	PFXAIV500630	PVC U



Fittings for PTFE pipe

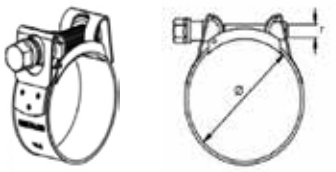
Threaded PTFE fittings

OD - A x B (Thread)	C	ID	D	E	F	Code	Material
6,3 x 1/2"	25	3,5	20	15	30	PFXAFT063050	PTFE
10 x 1/2"	30	6,5	20	15	30	PFXAFT100050	PTFE
12,5 x 1/2"	30	8,5	20	15	30	PFXAFT125050	PTFE
19 x 3/4"	40	13	25	15	30	PFXAFT190075	PTFE
25 x 1"	40	18,5	30	20	40	PFXAFT250100	PTFE



Stainless steel clamps

Stainlees steel hose clamps are used to clamp the inner pipe of ProtectaFlex Detect to realize the jointing with plastic fittings or, eventually, to clamp the outer pipe of the solution.



Stainless steel clamps for RPVC and LDPE material

Suitable for PE as well as PVC (depending on material) - please contact us for other connection materials

Inner Pipe (LDPE and RPVC)	Clamp Size	Code	Material	Screw mm	Torque Nm
6 x 11,5	10 - 12 mm	PFXCLAMP115	A2 Sainless Steel	7	1,5
10 x 16	15 -17 mm	PFXCLAMP160	A2 Sainless Steel	7	1,5
12 x 18,5	17 - 19 mm	PFXCLAMP185	A4 Sainless Steel	10	10
20 x 26	25 - 27 mm	PFXCLAMP260	A4 Sainless Steel	10	10
25 x 33	31 -34 mm	PFXCLAMP330	A4 Sainless Steel	11	12
32 x 42	40 -43 mm	PFXCLAMP420	A4 Sainless Steel	11	12
40 x 48	47 - 51 mm	PFXCLAMP480	A4 Sainless Steel	11	16
50 x 62	59 - 63 mm	PFXCLAMP620	A4 Sainless Steel	11	16

Stainless steel clamps for PTFE material

Inner Pipe (PTFE)	Clamp Size	Code	Material	Screw mm	Torque Nm
6 x 8	7 - 9 mm	PFXCLAMP080	A2 Sainless Steel	7	1,5
8 x 10	9 -11 mm	PFXCLAMP100	A2 Sainless Steel	7	1,5
10 x 12	11 - 13 mm	PFXCLAMP120	A2 Sainless Steel	7	1,5
12 x 14	13 - 15 mm	PFXCLAMP140	A2 Sainless Steel	7	1,5
19 x 21	19 - 21 mm	PFXCLAMP210	A4 Sainless Steel	10	10
25 x 28	27 -29 mm	PFXCLAMP280	A4 Sainless Steel	10	10

Other accessories on request

Catchpot

To complete our double containment system Aliaxis can also offer retention tanks.

The standard catch pot measures 500 mm x 500 mm x 400 mm high. But any other configuration and dimension is possible.

Aliaxis suggests to not use any catchpot in ProtectaFlex Detect solution, as a leak detection system is already present.

For this reason the catchpot is usually used in the standard ProtectaFlex solution, without copper wire connected to a leak detection.

The catch pot is made of polypropylene or black HDPE, thickness to suit. It has a removable transparent cover secured with stainless steel screws. The cover is sealed with an EPDM gasket and the pipe is connected via our range of bespoke fittings to an insulation valve with a lockable handle.

To connect catchpot to ProtectaFlex pipe, stainless steel clamps on outer side of the pipe are needed.

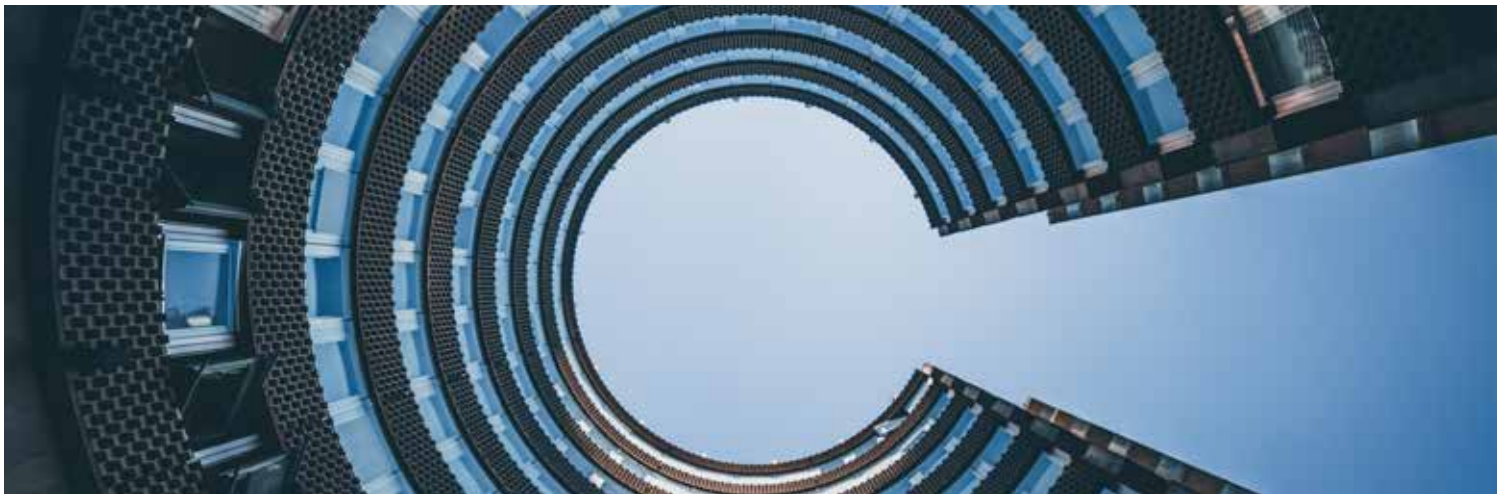
To reduce the cost of the retention tanks and use only one, you can use a stainless steel collar by tightening on the external pipe (PU) in order to redirect the leak to the opposite side (Towards the retention tank).

Stainless steel clamps for PVC or LDPE pipe

Outer Pipe (PU)	Clamp Size	Code	Material	Screw mm	Torque Nm
14,5	13 x 15	PFXCLAMP145	A2 Sainless Steel	7	1,5
19	17 - 19	PFXCLAMP185	A4 Sainless Steel	7	1,5
21,5	21 x 23	PFXCLAMP215	A4 Sainless Steel	10	10
29	29 x 31	PFXCLAMP290	A4 Sainless Steel	10	10
36	34 x 37	PFXCLAMP360	A4 Sainless Steel	11	12
45	43 x 47	PFXCLAMP450	A4 Sainless Steel	11	12
51	51 x 55	PFXCLAMP510	A4 Sainless Steel	11	16
65	63 x 68	PFXCLAMP650	A4 Sainless Steel	11	16

Stainless steel clamps for PTFE pipe

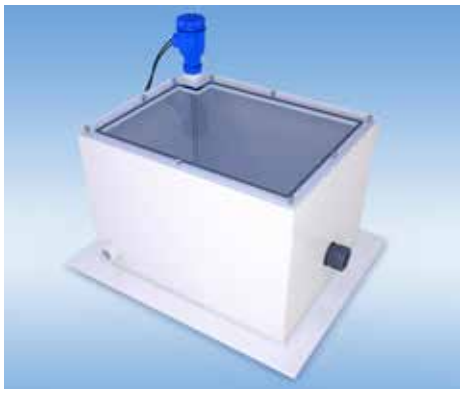
Outer Pipe (PU)	Clamp Size	Code	Material	Screw mm	Torque Nm
12	11 x 13	PFXCLAMP120	A2 Sainless Steel	7	1,5
14	13 x 15	PFXCLAMP140	A2 Sainless Steel	7	1,5
16	15 x 17	PFXCLAMP160	A2 Sainless Steel	7	1,5
18	17 x 19	PFXCLAMP180	A4 Sainless Steel	10	10
25	25 x 27	PFXCLAMP250	A4 Sainless Steel	10	10
32	31 x 34	PFXCLAMP320	A4 Sainless Steel	11	10

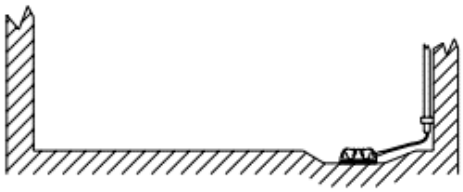


Other accessories
on request

Level or fluid presence detection is to be provided, to detect and inform of a possible leak.

This alarm will be reported to the BMS or the automation to implement safety procedures (pump stop, automatic valve closure).





EcoLeak - alarm boxes

In ProtectaFlex Detect, thanks to the copper wires detection system along the entire length of the pipe, a minimum quantity of liquid is sufficient to activate the alarm procedure or stop the production process automatically.

According to the different needs, the chemical fluid and the final application, the wires can be connected to an alarm box and a control panel situated inside the system.

This type of solution allows the damage to plant personnel to be even further limited, as well as avoiding environmental pollution or deterioration of the surrounding material.

At Aliaxis we are able to offer two types of leak monitoring using sensing cables or probes - EcoLeak.

In detail, Eco-1 is recommended when your need is to control only one single zone.

The second model, Eco-6, allows control of up to a maximum number of 6 zones simultaneously.

The maximum distance between the end of the pipe and the ECO box we recommend is 50 m. After this distance the signal can be compromised.

Eco-1*

Single Zone Leak Detection Panel

Technical information	
Sensing cable compatibility	All EcoLeak and TtraceTek sensing cable (TT1000, 1100, 3000, 5000, 5001 series)
Probe compatability	All EcoLeak and AquiTron probes
Detection probes	1 x At-MPS-R or 4 x AT-PROBE per zone
Maximum sensing circuit	30 metres of TraceTek sensing cable
Maximum lenght of jumper cable	300 metres of jumper cable
Number of zones	1
Sensing circuit	2 or 4 wire sensing
Enclosure	Polycarbonate, colour RAL 7035 matt
Dimensions & weight	130 x 130 x 60, WxHxD mm 0,40 kg
Ingress protection	IP66 - Indoor use only
Working temperature range	5°C to 40°C
Humidity	5% to 80% non-condensing
Power supply	110 to 240 Vac, 50-60 Hz, 3 watts
Relays	Volt free relay contacts one for leak, one for leak/break/power failure (Common, N/Open & N/Closed)
Relay output	3A 250Vac / 24Vdc. SPDT. Volt free relay contacts activated by leak or cable fault (NC/COM or NO/COM)
Status LED	Power Mains-Green, Leak-Red, Cable break-Yellow
Audible alarm	90dB at 10cm

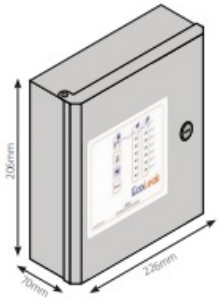
Approvals

Electromagnetic compatibility (EMC)

CE

Compliant with standards for emissions	BS EN 61326-1
Compliant with standards for immunity	BS EN 61326-1

CFR 47 Pt 15 B Class A - Radio Frequency Devices - Unintentional Radiators



Eco-6*

Six Zones Leak Detection Panel

Technical information	
Sensing cable compatibility	All EcoLeak and TraceTek sensing cable (TT1000, 1100, 3000, 5000, 5001 series)
Probe compatability	All EcoLeak and AquiTron probes
Detection probes	1 x EL-MPS-R or 4 x AT-PROBE per zone
Maximum sensing circuit	30 metres of TraceTek sensing cable
Maximum lenght of jumper cable	300 metres per zone
Number of zones	6
Sensing circuit	2 or 4 wire sensing
Enclosure	Powder coated steel, colour RAL 9006 matt, lockable
Cable entry (knockouts)	20mm dia, 6 along the bottom, 8 on the back, 1 on right side
Dimensions & weight	226 x 206 x 70, W x H x D mm 1,85 kg
Ingress protection	IP43 - Indoor use only
Working temperature range	5°C to 40°C
Working humidity range	5% to 80% non-condensing
Power supply	110 to 240 Vac, 50-60 Hz, 5 watts
Battery back-up	24 hours, integral 6vdc, 1850mA battery
Relays	Volt free relay contacts two for leak, one for cable break/power failure (SPDT)
Relay rating	5A at 250Vac and 24Vdc
Status LED	Power Mains-Green, Battery-Red, Low Battery-Red flashing, Leak-Red, Cable break-Yellow
Audible alarm	90 dB at 10 cm

* Please note that for installation in humid areas, we recommend an enclosure with a higher waterproof rating.

Electrical insulation and tracing

Insulation

Aliaxis can provide pipe insulation comprised of high-density, compression-resistant PIR foam sections combined with water vapor resistant insulators and a protective outer shell coating.

Features:

- Prevent condensation and corrosion
- Closed cell structure with integrated water vapor barrier
- Ease of application reduces installation costs and time
- Inherent resistance to microbial growth
- Standard lengths of 2 m

NB: Minimum wall thickness of 25mm required.

Electrical tracing

We offer a self-regulated micro heating cable.

Features:

- Small and very flexible to be installed between pipes and insulation
- No overheating or burning even when overlapping
- Independent control of heat production along the entire length
- Smooth switching for energy saving and longer lifespan
- Self-regulation of thermal performance in response to temperature
- Cut to length based on installation requirements and conditions

Specification:

- Temperature maintained (power on)
- Maximum intermittent exposure temperature (power off)
- Power supply 24V – 240V AC
- Outer shell – FR polyolefin or fluoropolymer
- Heating cable size approx. 11.6mm x 5.6mm
- Bus wire – 20AWG Nickel-plated copper
- Min. installation temperature. -50°C
- Rated output power 15 watts/m at 10°C

Use:

- External heating of pipes and chemical pipes
- Temperature Maintenance in Chemical Dosing Market
- Frost protection and temperature maintenance
- Moisture resistant applications
- Use in hazardous locations

Appendix 1:
Information form – Price Request*

Instructions

Please return the completed form to your technical and sales contact.

Please be as exhaustive as possible in describing the fluids to be transported, as well as any special conditions, even temporary (e.g. any high-temperature rinsing operations or periodic disinfection). If possible, enclose isometric drawings of the networks, specifying minimum bend radii, particularly in the case of sheathing.

Project

- Name: .....
- Location: .....
- Scheduled completion date: .....
- Project management: .....
- Implementation: .....

Environmental conditions

- Exposure to weather (indoor / outdoor / sun protection / frost)

- Ambient temperature (min/max)

- Additional information (humidity, exposure to chemical vapors, etc.)

Description of the pipes

- Expected lifespan:
  (N.B.: ProtectaFlex Detect is designed for a minimum lifetime of 10 years subject to chemical compatibility)

- Detail of the pipes: fill in the following table

Detection system

N.B.: As the fluid propagates by capillarity, it is not necessary to place the detection points at the lowest.

- Type (visual / liquid sensor):

- Maximum length between two detection points (standard recommendation: 80 m):

Designation	DN (mm)	Length (m)	Fluid(s) conveyed	Flow (m^3/h)		Concentration (%)		Temperature (°C)		Service Pressure (bar)		Connection interfaces	Notes (indicate pressure peaks, temperature or concentration, special installation or pulling conditions, etc.)
				min	max	min	max	min	max	min	max		
Example	20	75	Bisulphite	n/a	2 m^3/h		< 25% < 18%	25°C	40°C	0,7	2,0	1" NPT	30 m

* Please send this information to your commercial sales representative for all pricing requests.

Appendix 2:
Chemical Compatibility Chart

Manufaturer makes no warranties or guarantees as to the accuracy of this information, or the fitness of a product for a particular application. This information is not a recommendation of any kind. Manufacturer reserves the right to change specifications without prior notice. Field testing should always be performed to confirm the suitability of the product for the application.

G = good chemical compatibility - F = fair chemical compatibility - L= limited chemical compatibility - P = poor chemical compatibility - *=predicted data

Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Acetaldehyde 40% aq sol	C^2H^4O	P*	P*	G	G	G	G*
Acetaldehyde 100% aq sol	C^2H^4O	P*	P*	G	G	G	G
Acetic Acid 10% aq sol	$C^2H^4O^2$	G	L*	G	G	G	G
Acetic Acid 60% aq sol	$C^2H^4O^2$	G	L	G	G	G	G
Acetic Acid glacial	-	P	P	P	P	G	G*
Acetic Anhydride	$C^4H^6O^3$	P*	P*	P	P	G	G*
Acetone traces	C^3H^6O	P	P	L	P	G	G*
Acetone 100%	C^3H^6O	P	P	L	P	G	G
Acetonitrile	C^2H^3N		P*				
Acetophenone	C^8H^8O	P*	P*				
Acetylene Gas	C^2H^2	G				G	G*
Adipic Acid	$C^6H^{10}O^4$	G		G		G	G*
Alcohol Allyl	C^3H^6O	P*	P*				
Alcohol Amyl	$C^5H^{11}OH$	G		G	G	G	G*
Benzyl Alcohol	C^7H^8O	P*	P*				
Butyl Alcohol	$C^7H^{12}O^2$	F		G	G	G	G
Cetyl Alcohol	$C^{16}H^{34}O$	G*	G*			G	G
Dodecyl Alcohol	$C^{12}H^{26}O$	G*	G*				
Ethyl Alcohol 40%aq sol	C^2H^6O	G		G	P		
Ethyl Alcohol 100%aq sol	C^2H^6O	G*		P	P		
Hexyl Alcohol	$C^6H^{14}O$	G*					
Isopropyl Alcohol	C^3H^8O	G				G	G
Lauryl Alcohol	$C^{12}H^{26}O$	G*	G				
Methyl Alcohol 6% aqsol	CH^4O	G	G	G			
Methyl Alcohol 100% aqsol	CH^4O	L		L	P		
Nonyl Alcohol	C^9H^20O	G*					
Octyl Alcohol	C^8H^{18}	G*		G			
Propargyl Alcohol	C^3H^4O	G					
Aliphatic Hydrocarbons	$C^3H^7NO^2$						
Allyl Chloride	C^3H^5Cl	P*	P*				
Alum	–	G	G	G	G	G	G*
Aluminum Acetate	AlF^3	G*					
Aluminum Chloride (PAC)	$AlCl^3$	G		G	G	G	G
Aluminum Fluoride	$AlCl^3$	G		G		G	G*
Aluminum hydroxide	$Al(HO)^3$	G*		G	G*	G	G
Aluminum nitrate	$Al(NO^3)^3$	G*	G*	G	G*	G	G*
Aluminium Oxolate	AlF^3	G*	G*				
Aluminum Oxychloride	Al^2O^3	G*					
Aluminum Potassium	Al^2O^3	G	G	G		G	G*
Aluminum Sulphate	$Al^2(SO^4)^3$	G		G	G	G	G
Ammonia 0.88S.G.aqsol	NH^3	L-P	P	L	L	G	G
Ammonia anhydrous gas	NH^3	F		F	F	G	G*
Ammonia anhydrous liq	NH^3	F	F	F	L	G	G
Ammonium Bicarbonate	NH^4HCO^3	G*		F		G	G*
Ammonium Bifluoride	NH^4HF^2	G*		G		G	G*

G = good chemical compatibility - F = fair chemical compatibility - L= limited chemical compatibility - P = poor chemical compatibility - *=predicted data

Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Ammonium Carbonate	$(NH^4)^2CO^3$	G		G		G	G*
Ammonium Chloride	$(NH^4)Cl$	G		G	G	G	G
Ammonium Fluoride 20%	$(NH^4)F$	G*					
Ammonium Hydrosulfide	H^5NS	G*					
Ammonium Hydroxide	$NH^3 + H^2O$	G		G	G*	G	G
Ammonium	$NH+^4$	G*	G*				
Ammonium Nitrate	$(NH^4)NO^3$	G*	G*	G	G*	G	G
Ammonium Oxalate	$C^2H^8N^2O^4$	G					
Ammonium persulphate	$(NH^4)^2S^2O^8$	G		G	G*	G	G*
Ammonium Phosphate	$(NH^4)^3PO^4$	G		G-F	F*	G	G
Ammonium Sulphate	$(NH^4)^2SO^4$	G		G	G	G	G*
Ammonium Sulphide	$(NH^4)^2S$	G	P	G	G*	G	G*
Ammonium Thiocyanate	NH^4SCN	G*	G*				
Amyl Acetate	$C^7H^{14}O^2$	P		P	P	G	G
Amyl Alcohol	$C^5H^{11}OH$	L*		G	P	G	G
Amyl Chloride	$C^5H^{11}Cl$	P*		P	P	G	G
Anethole	$C^{10}H^{12}O$			P	P		
Aniline	C^6H^7N	P		F	F*	G	G*
Aniline Hydrochloride	C^6H^8ClN	F		P	P	G	G*
Aniline Sulphate	$C^6H^3ClN^6$	G*					
Animal Oils	–	G*	P	L	P		
Anthraquinone	$C^{14}H^8O^2$						
Anthraquinone Sulphonic Acid	C^7H^8O						
Antimony Chloride	SbCl	G*	G*				
Antimony Trichloride	$SbCl^3$	G*	G*				
Aqua Regia dilute	–						
Aqua Regia concentrated	–	F		F	F*	G	G*
Arcton 6 (Refrigerant)	CCl^2F^2						
Arcton 11 (Refrigerant)	CCl^3F						
Arcton 12 (Refrigerant)	CCl^2F^2	P					
Arcton 22 (Refrigerant)	$CHClF^2$						
Arcton 113 (Refrigerant)	$C^2Cl^3F^3$						
Arcton 114 (Refrigerant)	$C^2Cl^2F^4$						
Arsenic Acid concentrated	H^3AsO^4	G	L				
Arysulphonic Acid	As^2O^5		P*				
Barium Carbonate	$BaCO^3$	G		G	G*	G	G
Barium Chloride	$BaCl^2$	G*		G	G	G	G
Barium Hydroxide	$Ba(HO)^2$	G		G*	G*	G	G*
Barium Sulphate	BaS	G		G	G*	G	G*
Barium Sulphide	BaS	G		G	G*	G	G*
Beer	–	G		G		G	
Benzaldehyde traces	C^7H^6O	P*		P	P	G	G*
Benzaldehyde 100%	C^7H^6O	P*		P	P	G	G
Benzene	C^6H^6	F-L		F	P	G	G
Benzoic Acid	$C^7H^6O^2$	G		G	G*	G	G
Benzyl Alcohol	C^7H^8O	P*		P	P	G	G
Benzyl Chloride	C^7H^7Cl	G				G	G*
Borax	–	G*		G	G*	G	G
Boric Acid	H^3BO^3	G		G	G*	G	G

G = good chemical compatibility - F = fair chemical compatibility - L= limited chemical compatibility - P = poor chemical compatibility - *=predicted data

Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Brine	–	G	G	G	G		
Bromine traces - gas	Br^2	L		P	P	G	G*
Bromine 100% dry gas	Br^2	L		P	P	G	G*
Bromine liquid	Br^2	P		P	P	G	G
Butadiene	C^4H^6	F		P	P	G	G*
Butane Gas	C^4H^{10}	F		F	F*	G	G
Butanediol	$C^4H^{10}O^2$	P*	P*				
Butyl Acetate	$C^6H^{12}O^2$	P*	P*			G	G
Butyl Alcohol (Butanol)	$C^7H^{12}O^2$	F		G	G	G	G*
Butyric Acid 20% aq sol	$C^4H^8O^2$	G		P	P	G	G*
Butyric Acid concentrated	$C^4H^8O^2$	P*	P*	P		G	G*
Calcium Arsenate	$Ca^3As^2O^8$						
Calcium Bisulphlte	$CaH^2O^6S^2$	G	G	G	G*	G	G*
Calcium Carbonate	$CaCO^3$	G		G	G*	G	G
Calcium Chlorate	$Ca(ClO^3)^2$	G				G	G*
Calcium Chloride aq sol	$CaCl^2$	G		G	G	G	G
Calcium Hydroxide	$Ca(OH)^2$	G		G	G	G	G
Calcium Hypochlorite dilUTE	$Ca(ClO)^2$	G		G	G*	G	G*
Calcium Nitrate	$Ca(NO^3)^2$	G		G	G*	G	G
Calcium Phosphate	$Ca^3(PO^4)^2$	G*				G	G
Calcium Sulphate	$CaSO^4$	G		G	G*	G	G*
Carbolic Acid (phenol)	C^6H^6O	P		P	P	G	G
Carbon Dioxide	CO^2	G*		G	G	G	G*
Carbon Disulphide	CS^2	P	P	F		G	G*
Carbonic Acid	H^2CO^3	G		G	G*	G	G
Carbon Monoxide	CO	G*		G	G*	G	G*
Carbon Tetrachloride	CCl^4	P		P	P	G	G*
Casein	–	G	G*				
Castor Oil	–	G		G	G*	G	G*
Caustic (see Sodium Hydroxide)							
Chloracetic Acid	$C^2H^3ClO^2$	L				G	G*
Chloral Hydrate	$C^2H^3Cl^3O^2$	P*	P*				
Chloric Acid	$HClO^3$					G	G*
Chlorine 10% dry gas	Cl^2	P		L-P	P	G	G*
Chlorine 100% dry gas	Cl^2	P		L-P	P		
Chlorine 10% moist gas	Cl^2	P		P	P	G	G*
Chlorine Trifluoride	ClF^3	P*	P*				
Chlorine water sat sol	$Cl^2 \times H^2O$	L		G	G	G	G*
Chlorine water 2% sol	$Cl^2 \times H^2O$	G		G	G*	G	G
Chlorobenzene	C^6H^5Cl	P		F	P	G	G*
Chloroform	$CHCl^3$	P*	P*	F	L-P	G	G*
Chlorosulphonic Acid	$ClHSO^3$	P*		P	P	G	G*
Chrome Alum	$CClF^3$	G*					
Chromic Acid (plating sol)	H^2CrO^4	L		P	P	G	G*
Cider	–	G		G		G	
Citric Acid	$C^6H^8O^7$	G		G*	G*	G	G
Coal Gas	–	P					
Copper Chloride	CuCl	G		G	G	G	G
Copper Cyanide	CuCN	G		G	G	G	G*
Copper Fluoride	CuF	G*				G	G
Copper Nitrate	$Cu(NO^3)^2$	G		G	G	G	G
Copper Sulphate Solution	$CuSO^4$	G		G	G	G	G
Creosote	CH^8	F-L		L		G	G*
Cresols	C^7H^8O	P		F-L	F-L		
Cresylic Acids	$CH^3C^9H^4OH$	P		G	G*	G	G*
Crude Oil	–	L		P	P	G	G*
Cupric Chloride	$CuCl^2$	G	G				
Cupric Fluoride	CuF^2	G*					
Cupric Nitrate	$Cu(NO^3)^2$	G*	G*				
Cupric Sulphate	$Cu(NO^3)^2$	G	G				

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Cyanide	–	G	G*	G	G		
Cyclohexane	C^6H^{12}	P		G	F*	G	G
Cyclohexanol	$C^6H^{12}O$	P		G*	G*	G	G*
Cyclohexanone	$C^6H^{10}O$	P		P	P	G	G*
DDT Preparation	$C^{14}H^9Cl^5$						
Decalin	$C^{10}H^{18}$						
Detergents Alkaline	$C^{15}H^{10}N^2O^2$	G		G*	G*		
Detergent (synthetic) all	$C^{15}H^{10}N^2O^2$	G*		G	L-P	G	G
concentrations.	–						
Developers, photographic	–	G*	G*	G	G		
Dextrin (Starch gum)	$(C^6H^{10}O^5)n$	G*	G*				
Dextrose	$C^6H^{12}O^6$	G*	G*				
Diacetone Alcohol	$C^6H^{12}O^2$	P		G	G*	G	G*
Diammonium Phosphate	$H^9N^2O^4P$						
Dibutyl Phthalate	$C^{16}Br^{22}O^4$	P		L	L	G	G*
Dichloroethane	$C^4H^4Cl^2$	P		F	L*	G	G*
Dichlorethylene	$C^8H^{19}N$	P		F	L*	G	G
Dichlorobenzene	$C^6H^4Cl^2$	P*	P*				
Dichloro Methane	CH^2Cl^2	P	P				
Diethylene Glycol	$C^4H^{10}O^3$	F		G	F*	G	G
Diethyl Ether	$C^4H^{11}NO^2$	P		P	P	G	G*
Diisocyanate	C^6H^{10}	P	P				
Dimethylcarbinol	C^3H^8O	G					
Dimethyl Formanide	C^3D^7NO	P		G	G*	G	G*
Dimethyl Sulphoxide	C^2H^6OS	P				G	G*
Dioctyl Phthalate	$C^{24}H^{38}O^4$	P				G	G*
Dioctyl Phosphate	$C^{16}H^{35}O^4P$	L*	P*	L	P		
Dioxane	$C^4H^8O^2$	P	P	L	P		
Disodium Phosphate	Na^2O^4P	G	G	G	G*		
Diesel Oil	–	F		F	L*	G	G
Emulsifiers all concs.	–	G*	G*			G	G
Emulsions, photographic	–	G*	G*				
Ethane	C^2H^6	G				G	G*
Ethyl Acetate	$C^4H^8O^2$	P		F	F*	G	G
Ethyl Alcohol (Ethanol)	C^2H^6O	G				G	G
Ethyl Alcohol 20% aq sol	C^2H^6O	G	L-P*	G	P		
Ethyl Alcohol 40% aq sol	C^2H^6O	L	L-P*	G	P		
Ethyl Alcohol 100% aq sol	C^2H^6O	P	P	P	P	G	G*
Ethyl Butryate	$C^9H^{10}O^2$	P				G	G*
Ethyl Chloride	C^2H^5Cl	P				G	G
Ethyl Ether	$C^5H^7NO^2$	P		P	P	G	G
Ethyl Formate	$C^3H^6O^2$	P*	P*				
Ethyl Sulphate	$C^2H^5O^4S$					G	G*
Ethylene Bromide	$C^2H^4Br^2$	P		P	P	G	G*
Ethylene Chlorhydrin	C^2H^5ClO	P	P	P	P	G	G*
Ethylene Chloride	$C^2H^4Cl^2$	P		P	P	G	G
Ethylene Dibromide	$C^2H^4Br^2$	P				G	G*
Ethylene Dichloride	$C^2H^4Cl^2$	P		P	P	G	G*
Ethylene Glycol	$C^2H^6O^2$	G		G	G	G	G

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Ethylene Oxide	C^2H^4O	P		G	G*	G	G
Fatty Acids	–	G		P	P	G	G
Ferric Chloride	$FeCl^3$	G		G	G	G	G
Ferric Nitrate	$Fe(NO^3)^3$	G		G	G	G	G
Ferric Sulphate	$Fe^2(SO^4)^3$	G		G	G*	G	G
Ferrous Ammonium	$Fe^2(SO^4)^3$	G*	G*				
Ferrous Chloride	$FeCl^2$	G		G	G	G	G*
Ferrous Sulphate	$FeSO^4$	G		G	G	G	G*
Fixing Solution,	–	G*	G*	G	G		
Photographic	–						
Flavours and Essences	–			G*			
Fluorine	F^2	P		P	P	P	P
Fluosilic Acid 40% aq sol	H^2SiF^6	L		G	G*	G	G
Formaldehyde 40%aq sol	CH^2O	G		P	P	G	G
Formic Acid 3% aq sol	CH^2O^2	G	G	G	G		
Formic Acid 10% aq sol	CH^2O^2	G	G	G	G	G	G*
Formic Acid 25% aq sol	CH^2O^2	L	P	G	G		
Formic Acid 50% aq sol	CH^2O^2	L	P*	G	G		
Formic Acid 100% aq sol	CH^2O^2	P		P	P	G	G
French Polish		P	P	G*			
Freon 11 (Refrigerant)	CCl^3F	G		F	F*	G	G*
Freon 12 (Refrigerant)	CCl^2F^2	G		G	G*	G	G*
Freon 22 (Refrigerant)	$CHClF^2$	G				G	G*
Freon 113 (Refrigerant)	$C^2Cl^3F^3$	F				G	G*
Freon 114 (Refrigerant)	$C^2Cl^2F^4$					G	G*
Fructose	$C^6H^{12}O^6$	G*	G*			G	G
Fruit Pulp/Juices	–	G		G-L	G-L	G	G*
Fuel oil	–	G		F	F*	G	G
Furfural	$C^5H^4O^2$	P		P	P	G	G*
Gallic Acid	$C^7H^6O^5$	G		G	F*	G	F*
Gas Oil	–	G-L	P*	L*	P*		
Gaz (liquefied petroleum)	C^5H^{12} - $C^{12}H^{26}$	P	P				
Glucose	$C^6H^{12}O^6$	G		G	F*	G	G*
Glycerine	$C^3H^5(OH)^3$	G		G	G	G	G
Glycolic Acid 30% aq sol	$C^2H^4O^3$	G		G	G*	P	P
Grape Sugar	–	G		G	G	G	G*
Greases General	–			L*	P*		
Mineral	–	L	P	L*	P*		
Ground Nut Oil	–	P	P	L	P		
Heptane	C^7H^{16}	L		G	P	G	G
Hexadecanol	$C^{16}H^{34}O$	G*	G*				
Hexane	C^6H^{14}	L		P	P	G	G
Hydrazine	N^2H^4	P				G	G*
Hydrobromic Acid	HBr	G		G	F*	G	G*
Hydrobromic Acid 50% aq sol	HBr	G	G	G	G		
Hydrobromic Acid 100% aq sol	HBr	G*	G*	G	G		
Hydrochloric acid 10% aq sol	HCl	G	G	G	G	G	G
Hydrochloric acid	HCl	G	G	G	G	G	G
Hydrochloric acid concentrated	HCl	G	L	G	G	G*	G*
Hydrocyanic Acid	HCN					G	G
Hydrocyanic Acid 10% aq sol	HCN			G	G		
Hydrofluoric Acid	HF					G	G
Hydrofluoric Acid 4% aq sol	HF	G	G	G	G		
Hydrofluoric Acid 40% aq sol	HF	G		G	G		
Hydrofluoric Acid 60% aq sol	HF	P	P	G	G-L		
Hydrofluoric Acid concentrated	HF	P	P	G	L		
Hydro Fluosilicic Acid	N^2H^6O	P		G	G*	G	G*
Hydrogen	H^2	G*	G*	L	L		
Hydrogen Bromide	HBr	G*					
Hydrogen Bromide (Anhydrous)	HBr						

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Hydrogen Chloride	HCl	G*					
Hydrogen Chloride (Anhydrous)	HCl						
Hydrogen Fluoride	HF	G*					
Hydrogen Fluoride (Anhydrous)	HF						
Hydrogen Peroxide	H^2O^2						
Hydrogen Peroxide 3% (10 vol)	H^2O^2	G		G	L		
Hydrogen Peroxide 12% (40 vol)	H^2O^2	G		G	L	G	G
Hydrogen Peroxide 30% (100 vol)	H^2O^2	G		G	L-P	G	G
Hydrogen Peroxide 90% and above	H^2O^2	G		G	P	G	G
Hydrogen Phosphide	H^3P	G*	G*				
Hydrogen Sulphide < 5%	H^2S	G		L-P	L-P	G	G
Hydrogen Sulphide gaseous	H^2S						
Hydroquinone	$C^6H^6O^2$	G		G	G		
Hydroxylamine Sulphate	$H^8N^2SO^6$						
Hypochlorous Acid	HClO	L	P*				
Industrial Methylated spirit	–	P*	P*	L	P		
Iodine, Tincture of	–	L-P*				G	G
Iodine solution in	–	P*	P*	L-P	P		
Potassium Iodine	KI						
Isocyanate	NCO	P	P	P*	P*		
Isophorone	$C^9H^{14}O$	P*	P*				
Iso Propyl Alcohol	CHJ^3	G	P	G			
Jet Fuel	–	L*	P*	L*	P*		
Kerosene (Paraffin Oil)	–	G-L	P*	L	P	G	G
Lactic Acid 10% aq sol	$C^3H^6O^3$	G		G	G		
Lactic Acid 100% aq sol	$C^3H^6O^3$	P*	P*	G	G	G	G
Lanoline	–	G*					
Lauric Acid	$C^{12}H^{24}O^2$	G*					
Lauryl Chloride	$C^{12}H^{25}Cl$						
Lead Acetate	$Pb(C^2H^3O^2)^2$	G*	G*	G	G		
Lead Arsenate	$As^4O^{16}Pb^3$	G*	G*				
Lead Nitrate	$Pb(NO^3)^2$	G*	G*				
Lead Tetraethyl	$C^8H^{20}Pb$	G*					
Linoleic Acid	$C^{18}H^{32}O^2$						
Linseed Cake	–						
Linseed Oil	–	L	P	L	P		
Magnesium Carbonate	$MgCO^3$	G*	G*				
Magnesium Chloride	$MgCl^2$	G*	G*	G	G	G	G
Magnesium Hydroxide 50% aq sol	$Mg(HO)^2$						
Magnesium Hydroxide	$Mg(HO)^2$	G*	G*	G	G	G	G
Magnesium Hydroxide 10% aq sol	$Mg(HO)^2$						
Magnesium Nitrate	$Mg(NO^3)^2$	G*	G*			G	G
Magnesium Sulphate	$MgSO^4$	G*	G*	G	G	G	G
Maleic Acid 25% aq sol	$C^4H^4O^4$			G	G		
Maleic Acid 50% aq sol	$C^4H^4O^4$			G	G		
Maleic Acid concentrated	$C^4H^4O^4$		P*	G	G		
Malic Acid	$C^4H^4O^4$	G				G	G
Manganese Sulphate	$MnSO^4$	G*	G*				
Mercuric Chloride	$HgCl^2$	P*	P*	G	G	G	G

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Mercuric Cyanide	$Hg(CN)^2$	G*	G*	G	G		
Mercurous Nitrate	$Hg(NO^3)^2$	G*	G*	G	G	G	G
Mercury	Hg	G*	G*	G	G	G	G
Mesityl Oxide	$C^6H^{10}O$	P*	P*				
Metallic Soaps (water sol)	–	G*					
Methane	CH^4	G				G	G
Methyl Acetate	$C^3H^6O^2$	P	P	P	P		
Methyl Alcohol (Methanol)	CH^4O					G	G
Methyl Alcohol 6% aq sol	CH^4O	L*	L-P*	G	L*		
Methanol 10%				G			
Methyl Alcohol 100% sol	CH^4O	P	P	L	P		
Methyl Bromide	CH^3Br	P*	P*				
Methyl Chloride	CH^3Cl	P*	P*			G	G
Methyl Ethyl Ketone	C^4H^8O	P*	P*	P	P	G	G
Methyl Isobutyl Ketone	$C^6H^{12}O$	P*	P*			G	G
Methyl Methacrylate	$C^5H^8O^2$	P*	P*				
Methyl Sulphate	CH^4SO^4	L*	P*				
Methylated Spirit	-	P*	P*	L	P		
Methylene Chloride	CH^2Cl^2	P	P	P	P	G	G
Milk	–	G		G	G		
Mineral Oils	–	G	P	L	P	G	G
Mixed Acids (sulph/nitric)	–		P*				
Molasses	–	G	G*				
Monochlorbenzene	C^6H^5Cl	P	P				
Mustard	–			G*			
Naptha	–	P*	P*	P	P	G	G
Napthalene	–	P*	P*	L-P	L-P		
Natural Gas	–	G					
Nickel Chloride	$NiCl^2$	G*	G*	G	G	G	G
Nickel Nitrate	$Ni(NO^3)^2$	G*	G*	G	G	G	G
Nickel Sulphate/salts	$NiSO^4$	G*	G*	G	G	G	G
Nicotine	$C^{10}H^{14}N^2$						
Nicotinic Acid	$C^6H^5NO^2$						
Nitric Acid 5% aq sol	HNO^3	G	G	G	G	G*	G*
Nitric Acid 10% aq sol	HNO^3	G	L	G	G	G	G
Nitric Acid 25% aq sol	HNO^3	G	L	G	G	G*	G*
Nitric Acid 50% aq sol	HNO^3	G	L	P	P	G	G
Nitric Acid 70% aq sol	HNO^3	L	P*	P	P	G*	G*
Nitric Acid 95% aq sol	HNO^3	P*	P*	P	P	G*	G*
Nitrobenzene	$C^6H^5NO^2$	P	P	P	P		
Nitropropane	$C^3H^7NO^2$	P	P				
Nitrous Fumes moist	–	P	P*				
Nitrous Oxide Gas	N^2O	G	L				
Nitrogen	N^2	G		G*			
Octane	C^8H^{18}						
Oil, ASTM Oil No 1	–					G	G
Oil, ASTM Oil No 3	–					G	G
Oil, ASTM Ref Fuel A	–					G	G
Oil, ASTM Ref Fuel B	–					G	G
Oil, Animal	–	G-L*	P*	L	P		
Oil, Etheral	–	P	P				
Oil, Hydraulic	–					G	G
petroleum base	–	P	P				
synthetic base	–	P	P				
Oil, Mineral	–	G-L	P*	P	P		
Oil, Vegetable	–	G-L	P*	L	P		
Oleic Acid	$C^{18}H^{34}O^2$	G*	L	L	P	G	G
Oxalic Acid 10% aq sol	$C^2H^2O^4 \times {}^2H^2O$	G		G	G		
Oxygen	O^2	G*	G*	L	P		
Ozone	O^3	G*		P	P	G	G

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Palmitic Acid	$C^{16}H^{32}O^{2}$	G*					
Pentane	$C^{5}H^{12}$						
Peracetic Acid	$C^{2}H^{4}O^{3}$						
Perchloric Acid 10% aq sol	$HClO^{4}$		P*	G	G	G	G
Perchloroethylene	$C^{2}Cl^{4}$	P	P	P*	P*		
Petrol	–			P	P		
Petrol / Benzene mix (A)	–	P*	P*	P	P		
Petroleum Ether (A)	–	P	P	P	P		
Phenols/Carbolic acid	–		P*	P	P		
Phenylcarbinol	$C^{7}H^{8}O$	P	P*	P*	P*		
Phenylhydrazine	$C^{6}H^{8}N^{2}$	P*	P*				
Phenylhydrazine Hydrochloride	$C^{6}H^{8}N^{2}$-HCl		P				
Phosgene gas	$CCl^{2}O$						
Phosgene Liquid	$CCl^{2}O$						
Phosphates	–	G*	G*				
Phosphoric Acid	$H^{3}PO^{4}$					G	G
Phosphoric Acid 20% aq sol	$H^{3}PO^{4}$	G	G	G	G	G	G
Phosphoric Acid 30% aq sol	$H^{3}PO^{4}$	G	G	G	G	G	G
Phosphoric Acid 50% aq sol	$H^{3}PO^{4}$	G	G	G	G	G	G
Phosphoric Acid 95% aq sol	$H^{3}PO^{4}$	G	G	L	P	G	G
Phosphoric Anhydride	$O^{10}P^{4}$	G*		G	L		
Phosphorus	$H^{3}PO^{4}$			G	P		
Phosphorus Pentoxide	$O^{10}P^{4}$	G*		G	G		
Phosphorus Trichloride	PCl^{3}	P*	P*	G			
Phthalic Anhydride	$C^{8}H^{4}O^{3}$	G*	G*				
Picric Acid	$C^{6}H^{3}N^{3}O^{7}$						
Picric Acid 1% aq sol	$C^{6}H^{3}N^{3}O^{7}$	G	G*	G			
Picric Acid 10% w/w in alcohol	$C^{6}H^{3}N^{3}O^{7}$	G*					
Polyester Emulsions	–	P					
Polyglycol Ethers	–	P*	P*			G	G
Polystyrene Emulsions	–	P					
Potassium Acid Sulphate	$KHSO^{4}$	G	G				
Potassium Antimonate	$KSbO^{3}$	G	G				
Potassium Bicarbonate	$KHCO^{3}$	G*	G*			G	G
Potassium Bichromate	$K^{2}Cr^{2}O^{7}$	G*					
Potassium Bisulphate	$KHSO^{4}$	G	G*				
Potassium Borate	$K^{2}B^{4}O^{7}$	G*	G*	G-L	G-L		
Potassium Bromate	$KBrO^{3}$	G*	G*				
Potassium Bromide	KBr	G*	G*			G	G
Potassium Bromide 10% aq sol	KBr						
Potassium Carbonate	$K^{2}CO^{3}$	G*	G*				
Potassium Chlorate	$KClO^{3}$	G*	G*				
Potassium Chlorate 5% aq sol	$KClO^{3}$						
Potassium Chloride	KCl	G	G	G	G		
Potassium Chromate	$K^{2}CrO^{4}$	G*	G*	G-L	G-L		
Potassium Cuprocyanide	$K^{2}CrO^{4}$	G	G				
Potassium Cyanide	KCN	G	G	G	G		
Potassium Dichromate	$K^{2}Cr^{2}O^{7}$	G	G	G	G		
Potassium Ferricyanide	$C^{6}N^{6}FeK^{3}$	G*	G*	G*	G*		

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Potassium Ferrocyanide	$C^6N^6FeK^4$	G*	G*	G	G		
Potassium Fluoride	KF	G*	G*				
Potassium Hydroxide	KHO					G	G
Potassium Hydroxide 1 % aq sol	KHO	G	G	G	G		
Potassium Hydroxide 10 % aq sol	KHO	G	G	G	G		
Potassium Hydroxide concentrated	KHO	G	P	G	G		
Potassium Hypochlorite	KClO	G					
Potassium Nitrate	KNO^3						
Potassium Nitrate 10 % aq sol	KNO^3	G*	G*	G	G		
Potassium Perborate	BHO^3	G*	G*	G	G		
Potassium Perchlorate	$KClO^4$	G*					
Potassium Permanganate	$KMnO^4$	G*		G	G		
Potassium Persulphate	$K^2S^2O^8$	G*	G*				
Potassium Phosphate	KH^2PO^4	G*	G*				
Potassium Sulphate	K^2SO^4						
Potassium Sulphate 10 % aq sol	K^2SO^4	G*	G*	G	G		
Potassium Sulphide	K^2S	G	G			G	G
Potassium Thiosulphate	$H^2S^2O^3K^2$	G	G				
Propane	C^3H^8	G					
Propylene dichloride	$C^3H^6Cl^2$	P*	P*				
Propylene Glycol	$C^3H^8O^2$	G*				G	G
Propylene Oxide	C^3H^6O	P*	P*				
Pyridine	C^5H^5N						
Saccharase	–	G*	G*				
Salicylic Acid	$C^7H^6O^3$						
Sea Water	–	G*	G*	G	G		
Selenic Acid	–						
Silver Acetate	$C^2H^3AgO^2$	G*	G*				
Silver Cyanide	CAgN	G*	G*				
Silver Nitrate	$AgNO^3$	G		G	G	G	G
Soap sol. 10 % aq sol	–	G		G	G		
Soda water	–	G*	G*	G*	G*		
Sodium Acetate	$C^2H^3NaO^2$	G*				G	G
Sodium Acid Sulphate	$C^2H^3NaO^2$	G	G				
Sodium Aluminate	$NaAlO^2$	G	G				
Sodium Antimonate	NaO^3Sb	G	G				
Sodium Benzoate	$C^7H^5NaO^2$	G*	P*				
Sodium Bicarbonate	$NaHCO^3$	G*	G*	G	G	G	G
Sodium Bisulphate	$NaHSO^4$	G*	G*	G	G	G	G
Sodium Bisulphate 10 % aq sol.	$NaHSO^5$						
Sodium Borate	$Na^2B^4O^7$	G*					
Sodium Bromide	NaBr	G*	G*			G	G
Sodium Bromide 10% aq sol	NaBr						
Sodium Carbonate	Na^2CO^3	G*	G*	G	G		
Sodium Carbonate 10% aq sol	Na^2CO^3						
Sodium Chlorate	$NaClO^3$	G*	G*	G	G		
Sodium Chloride	NaCl	G	G	G	G	G	G
Sodium Cyanide	CNNa	G	G				
Sodium Ferricyanide	$C^{18}H^{29}NaSO^3$	G*	G*				
Sodium Ferrocyanide	$C^6FeNa^4N^6$	G*	G*				
Sodium Fluoride	NaF	G*				G	G
Sodium Hydroxide (Caustic Soda)	NaOH					G	G
Sodium Hydroxide 1% aq sol	NaOH	G	L	G	G	G	G
Sodium Hydroxide 10% aq sol	NaOH	G	L	G	G	G	G
Sodium Hydroxide 40% aq sol	NaOH	G	P	G	G	G	G
Sodium Hydroxide concentrated	NaOH	G	P	G	G	G*	G*
Sodium Hypochlorite 15%	NaClO	G	L	G	G	G	G
Sodium Hyposulphate	NaClO	G*	G*				
Sodium Metaphosphate	$Na^6P^6O^{18}$	G*	G*				
Sodium Nitrate 10% aq sol	$NaNO^3$	G*	G*	G	G		

G = good chemical compatibility - F = fair chemical compatibility - L= limited chemical compatibility - P = poor chemical compatibility - *=predicted data

Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Sodium Nitrite	$NaNO^{2}$	G*	G*			G	G
Sodium Perborate	$NaBO^{3}{\cdot}nH^{2}O$	G*					
Sodium Peroxide	$Na^{2}O^{2}$	G*	G*				
Sodium Phosphate	$Na^{3}PO^{4}$	G*	G*			G	G
Sodium Phosphate 10% aq sol	$Na^{3}PO^{4}$						
Sodium Silicate	$Na^{2}SiO^{3}$	G*	G*	G	G		
Sodium Sulphate	$Na^{2}SO^{4}$	G*	G*	G	G		
Sodium Sulphate 10% aq sol	$Na^{2}SO^{5}$						
Sodium Sulphide	$Na^{2}S$						
Sodium Sulphide 25% aq sol	$Na^{2}S$	G	G	G	G		
Sodium Sulphide concentrated	$Na^{2}S$	G	G	G	G		
Sodium Sulphite	$Na^{2}SO^{3}$	G		G	G		
Sodium Sulphite 10% aq sol	$Na^{2}SO^{4}$						
Sodium Tetraborate	$Na^{2}B^{4}O^{7,10}H^{2}O$	G*					
Sodium Thiosulphate	$Na^{2}S^{2}O^{3}$	G	G				
Soft Soap	–	G					
Solvent Naptha	–	L*	P*	L*	P*		
Stannic Chloride	$SnCl^{4}$	G	G				
Stannous Chloride	$SnCl^{2}$	G	G				
Starch	–	G*	G*	G	G		
Steam	$H^{2}O$	P		P			
Stearic Acid	$C^{18}H^{36}O^{2}$	G*	G*	G	G	G	G
Stearin (also Stearine)	$C^{57}H^{110}O$			G*	G*		
Styrene	$C^{8}H^{8}$	P	P				
Sucrose	–	G*	G*	G	G		
Sulphamic Acid	$H^{2}NSO^{3}H$	P					
Sulphur Colloidal	S			G	G		
Sulphur Dioxide dry	SO^{2}	G*	G*	G	G		
Sulphur Dioxide moist	SO^{2}	L	P*	G	P		
Sulphur Dioxide liquid	SO^{2}	L	P*	P	P		
Sulphur Trioxide	SO^{3}			P	P		
Sulphuric Acid	$H^{2}SO^{4}$						
Sulphuric Acid 10% aq sol	$H^{2}SO^{4}$	G	G	G	G	G	G
Sulphuric Acid 20% aq sol	$H^{2}SO^{4}$	G	G	G	G		
Sulphuric Acid 30% aq sol	$H^{2}SO^{4}$	G	G	G	G		
Sulphuric Acid 40% aq sol	$H^{2}SO^{4}$	G	G	G	G		
Sulphuric Acid 45% aq sol	$H^{2}SO^{4}$	G	G	G	G		
Sulphuric Acid 50% aq sol	$H^{2}SO^{4}$	G	L	G	G	G	G
Sulphuric Acid 55% aq sol	$H^{2}SO^{4}$	L	L	G-L	G-L		
Sulphuric Acid 60% aq sol	$H^{2}SO^{4}$	L	L	G-L	L-P		
Sulphuric Acid 70% aq sol	$H^{2}SO^{4}$	L	P	L	P		
Sulphuric Acid 80% aq sol	$H^{2}SO^{4}$	L	P	L	P		
Sulphuric Acid 90% aq sol	$H^{2}SO^{4}$	P	P	P	P		
Sulphuric Acid 95% aq sol	$H^{2}SO^{4}$	P	P	P	P		
Sulphuric Acid 98% aq sol	$H^{2}SO^{4}$	P	P	P	P	G	G
Sulphuric Acid fuming	$H^{2}SO^{4}$	P	P	P	P		
Sulphurous Acid	$H^{2}SO^{3}$						
Sulphurous Acid 10% aq sol	$H^{2}SO^{3}$	G					
Sulphurous Acid 30% aq sol	$H^{2}SO^{3}$	G					

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Chemical	Chemical Formula	RPVC		LDPE		PTFE	
		@ 20°c	@ 60°c	@ 20°c	@ 60°c	@ 20°c	@ 50°c
Sulphur Trioxide	SO^3			P	P		
Surface Active Agents	–	G*	G*				
all concs. (emulsifiers, synthetic de-tergents and wetting agents)	–						
Tallow	–	G*		G	G		
Tannic Acid	$C^{76}H^{52}O^{46}$	G		G	G	G	G
Tanning Extracts	–	G*		G	G		
Tartaric Acid 10% aq sol	$C^4H^6O^6$	G		G	G		
Tetra Ethyl Lead	$C^8H^{20}Pb$	G*		G	P		
Tetrahydrofuran	C^4H^8O	P*	P*	P	P		
Tetrahydronapthalene	$C^{10}H^{12}$	P	P				
Tetralin	$C^{10}H^{12}$	P	P				
Thionyl Chloride	$SOCl^2$						
Toluene	C^7H^8	P*	P*	P	P	G	G
Transformer Oil	–	G	P	L	P		
Tributyl Phosphate	$C1^2H^{27}O^4P$	P*	P*	L	P		
Trichloracetic Acid	$C^2HCl^3O^2$	P*	P*				
Trichloroethane	$C^2H^3Cl^3$	P*	P*				
Trichloroethylene	C^2HCl^3	P	P	P	P	G	G
Trichlorobenzene	$C^6H^3Cl^3$	P*	P*				
Tricresyl Phosphate	$C^7H^{15}NO^2$	P*	P*	P	P		
Triethanolamine	$C^6H^{15}NO^3$	G	G	G	P		
Triethylene Glycol	$C^6H^{14}O^4$	G*				G	G
Trimethylamine	C^3H^9N						
Trimethylpropane	C^8H^{18}						
Trisodium Phosphate	Na^3PO^4	G	G	G	G		
Turpentine	–	L	P	G	P	G	G
Turps Substitute	–	L*	P*	L*	P*		
Urea Formaldehyde Sol	CH^4N^2O	P	P				
Urea 20% aq sol	CH^4N^2O	G*		G	G		
Uric Acid (dilute)	$C5H^4N^4O^3$			G	G		
Vegetable Oils	–	G	P	G-P	P		
Vinegar	$C^2H^4O^2$	G*		G	G		
Vinyl Acetate	$C^4H^6O^2$	P*	P*				
Water	H^2O	G	G	G	G		
Wetting Agents all concs.	–	G*	G*				
White Spirit	–	L*	P*	L*	P*		
Wines and Spirits	–	G	L	G	G		
Xylene	C^8H^{10}	P*	P*	G	L	G	G
Xylenol	$C^8H^{10}O$	P*	P*				
Yeast	–	G*		G	G		
Zinc Ammonium Carbonate	C^4NO^3ZN	G*	G*				
Zinc Carbonate	$ZnCO^3$	G*	G*	G*	G*		
Zinc Chloride 10% aq sol	$ZnCl^2$	G*	G*	G	G	G	G
Zinc Oxide	ZnO	G*	G*	G*	G*	G	G
Zinc Sulphide	$ZnSO^4$	G	G	G*	G*	G	G
Poly-Electrolite		G	G	G	G	G	G

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