Modular Blue Piping

Product Overview

High quality, lightweight aluminum piping and accessories to compliment our Perfect Air® line!

Easy to install, easy to change, no welding needed. This system helps reduce installation time and labor costs.



A wide variety of accessories are available, making installation a breeze!

Understanding the Modular Blue Piping Part Numbering System

P - Pipe
NS - Nipple Socket
PC - Socket Coupling
E45 - 45° Elbow
+

E90 - 90° Elbow **RT** - Reducing Tee

12 - ½" **34** - ¾"

1 - 1" **114** - 1¹/₄"

112 - 1½"

Example:

90° Elbow in ½": **RTI-E90-12** 1" Alum. Piping (20'): **RTI-P1-20**

SPRAYFISH

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Why Aluminum Piping for Compressed Air Systems?

Lower Installation Costs

More time is needed to install a compressed air system when using steel pipe compared to installing a system using other materials.

One factor behind this is that steel pipe must be threaded in order to join pipes and install the proper fittings. To properly thread steel pipe, you need special threading equipment and skilled workers to operate it. These workers cost more than unskilled workers, and that drives up installation costs.

Also remember that threading pipes is dirty work. You need cutting fluids to get a good thread, and that must be cleaned from the pipe before you can start using the system. Threading also creates a lot of debris.

Modifying and maintaining a compressed air system made with steel pipe is more difficult than modifying and maintaining systems built from other materials. One reason for this is that steel pipe is much heavier than other materials. Because steel pipe is so heavy, it requires more labor (read as higher labor costs) to handle the piping while making modifications than it would to make modifications to a system made with other piping materials.

Reduced System Leaks

Another issue with threaded connections is that they will inevitably leak. It's been estimated that 8 to 10% of the compressed air in a system will leak through threaded connections. This causes compressors to run harder and longer, driving up utility costs.

Doesn't Corrode

A common problem with using steel pipe is that moisture inside the system will cause pipes to rust from the inside out. Even if your compressed air system has a moisture trap, there will be some moisture in the system and corrosion will occur. Even galvanized steel pipe will corrode since not all pipes are galvanized both inside and out.

Corrosion causes several problems, beginning with air flow restricted by a rough inner surface caked with deposits caused by corrosion build up. Additionally, loose scale deposits collect over time and create pressure drops. This makes the air compressor work harder to maintain the pressure of the system. In extreme cases, loose scale can completely clog a line or damage equipment connected to a line. Of course, corrosion and loose scale affects air quality and makes it unsuitable for applications that require clean air.











The Case for Aluminum Piping

- Aluminum pipe systems are much easier to install and to modify than steel or copper pipe systems. Labor savings
 of 50% can be achieved, since aluminum pipe is supplied ready for use. Preparations beyond cutting, deburring,
 and chamfering are not required, nor are special tools needed. Aluminum pipe is calibrated, meaning that its
 diameter is strictly controlled. This means that associated quick connect components will fit securely.
- · Aluminum pipe is much lighter than steel or copper pipe and doesn't require threading or soldering.
- The compressed air provided by a system built with aluminum piping is much cleaner than air delivered by a steel pipe system. Aluminum pipe systems can help meet the requirements of ISO 8573-1: 2010 air quality standards, should the application require it. Cleaner air also means lower maintenance costs.
- Aluminum pipe's corrosion-resistant properties mean optimal air flow, reduced energy costs, and better air quality.
- The fittings used with aluminum pipe systems fit securely and leak far less than the fittings used with threaded systems. This translates directly into energy savings and improved plant productivity.

Material	Advantages	Disadvantages	Connection Methods
Black Pipe	Low cost components Readily available Rated to high pressure Established (old) technology	Labor intensive Corrosion problems Prone to leaks Costly to repair Not easily modified Safety concerns	Threaded Welded Grooved Crimped
Galvanized Steel	Low cost components Readily available Rated to high pressure Established (old) technology	Labor intensive Corrosion problems Prone to leaks Costly to repair/Safety Concerns Not easily modified	Threaded Welded Grooved Crimped
Copper	Low cost components Readily available Resistant to corrosion Established (old) technology	Labor intensive Prone to leaks Costly to repair Not easily modified Safety concerns	Soldered Quick Connect Crimped
Plastic	Low cost components Readily available Resistant to corrosion Lightweight	Labor intensive Prone to leaks Costly to repair (labor) Incompatibility issues Safety concerns	Glued Fused Quick Connect
Extruded Aluminum	Corrosion resistant/low pressure drop Lightweight/Dimensional integrity Resistant to mechanical shocks Easy to install and modify	Material cost Thermal expansion/contraction Lower pressure rating	Welded Grooved Quick Connect
Stainless Steel	Corrosion resistant/low pressure drop Chemical compatibility Rated to high pressure	Labor intensive Material costs Costly to repair (labor) Safety concerns	Threaded Welded Grooved Crimped Quick Connect

McDonough, K. (2013, November). Five reasons why aluminum piping makes sense for compressed air systems.

Plant Engineering. Retrieved from http://bit.ly/1rAGkyz





How does RTi Blue Piping Stack Up Compared to the Other Systems Available?

RTi Blue Piping	Competition	Copper
Full Bore Design Saves energy (A 14.5% pressure drop uses 10% additional energy), more flow available	YES	NO
Lower Install Costs One third the labor costs	YES	NO
Light-weight Piping Easier installation	YES	NO
Modular Design	YES	NO
Loop Built into Mainline Header Drops No need to build loops in mainline header	YES	NO
30-35% Installed Cost Savings More storage space, less friction, no leaks,	YES	NO

Exclusive Benefits of RTi Blue Piping?

RTi Blue Piping Has:	Competitor?
½" Piping for Drops?	NO Smallest size 3/4"
1 1/4" Piping & Connectors?	NO Only 1 1/4" for mainline
10' or 20' Piping Lengths?	NO Only 20' lengths
Interchangeable with Prevost™?	YES
Single port manifold with an integral ball valve?	NO









Part Number	Sizing	
RTI-P34-20	20 mm	3/4"
RTI-P1-20	25 mm	1"
RTI-P114-20	32 mm	1 ½"
RTI-P112-20	40 mm	1 ½"
RTI-P2-20	50 mm	2"
RTI-P212-20	63 mm	2 ½"
RTI-P12-13	16 mm	1/2"

Double Bend Aluminum Pipe

Part Number	Sizing	
RTI-DB12	16 mm	1/2"
RTI-DB34	20 mm	3/4"
RTI-DB1	25 mm	1"







Couplers

Part Number	Sizing	
RTI-PC12	16 mm	1/2"
RTI-PC34	20 mm	3/4"
RTI-PC1	25 mm	1"
RTI-PC114	32 mm	1 1/4"
RTI-PC112	40 mm	1 ½"
RTI-PC2	50 mm	2"
RTI-PC212	63 mm	2 ½"

Reduction Coupler

Part Number	Sizing	
RTI-RC1-34	25 mm x 20 mm	1" x ¾"
RTI-RC114-1	32 mm x 25 mm	1 1/4" x 1"
RTI-RC112-1	40 mm x 25 mm	1 ½" x 1"
RTI-RC112-114	40 mm x 32 mm	1 ½" x 1 ¼"
RTI-RC2-112	50 mm x 40 mm	2" x 1 ½"

End Caps



Part Number	Sizing	
RTI-EC12	16 mm	1/2"
RTI-EC34	20 mm	3/4"
RTI-EC1	25 mm	1"
RTI-EC114	32 mm	1 1/4"
RTI-EC112	40 mm	1 1/2"
RTI-EC2	50 mm	2"
RTI-EC212	63 mm	2 1/2"

90° Elbow



Part Number	ber Sizing	
RTI-E90-12	16 mm	1/2"
RTI-E90-34	20 mm	3/4"
RTI-E90-1	25 mm	1"
RTI-E90-114	32 mm	1 1/4"
RTI-E90-112	40 mm	1 1/2"
RTI-E90-2	50 mm	2"
RTI-E90-212	63 mm	2 1/2"

45° Elbow



Part Number	Sizing	
RTI-E45-34	20 mm	3/4"
RTI-E45-1	25 mm	1"
RTI-E45-114	32 mm	1 1/4"
RTI-E45-112	40 mm	1 1/2"
RTI-E45-2	50 mm	2"
RTI-E45-212	63 mm	2 ½"

Aluminum 90° Male NPT x Pipe

Part Number	Sizing	
RTI-E90A-34-12	20 mm x ½" NPT	3/4" X 1/2"
RIT-E90A-1-12	25 mm x ½" NPT	1" x ½"
RTI-E90A-1-34	25 mm x ¾" NPT	1" x ¾"





Equal Tee



Part Number	Sizing	
RTI-T12	16 mm	1/2"
RTI-T34	20 mm	3/4"
RTI-T1	25 mm	1"
RTI-T114	32 mm	1 1/4"
RTI-T112	40 mm	1 1/2"
RTI-T2	50 mm	2"
RTI-T212	63 mm	2 ½"

Female NPT Tee

Part Number	Sizing	
RTI-FT34-12	20 mm x ½" NPT 3⁄4" x ½"	
RTI-FT1-12	25 mm x ½" NPT	1" x ½"



Reducing Tee



Part Number	Siz	Sizing	
RTI-RT34-12	20 mm x 16 mm	3/4" X 1/2"	
RTI-RT1-12	25 mm x 16 mm	1" x ½"	
RTI-RT1-34	25 mm x 20 mm	1" x ¾"	
RTI-RT114-34	32 mm x 20 mm	1 1/4" x 3/4"	
RTI-RT114-1	32 mm x 25 mm	1 1/4" x 1"	
RTI-RT112-1	40 mm x 25 mm	1 ½" x 1"	
RTI-RT112-114	40 mm x 32 mm	1 ½" x 1 ¼"	
RTI-RT2-114	50 mm x 32 mm	2" x 1 1/4"	
RTI-RT2-112	50 mm x 40 mm	2" x 1 ½"	
RTI-RT212-112	63 mm x 40 mm	2 ½" x 1 ½"	
RTI-RT212-2	63 mm x 50 mm	2 ½" x 2"	

Nipple Socket, Male NPT



Part Number	Sizing	
RTI-NS12-12	16 mm x ½" NPT	½" X ½"
RTI-NS34-12	20 mm x ½" NPT	³ / ₄ " X ¹ / ₂ "
RTI-NS34-34	20 mm x ¾" NPT	³ / ₄ " x ³ / ₄ "
RTI-NS1-12	25 mm x ½" NPT	1" x ½"
RTI-NS1-34	25 mm x ¾" NPT	1" x ¾"
RTI-NS1-1	25 mm x 1" NPT	1" x 1"
RTI-NS114-1	32 mm x 1" NPT	1 ½" x 1"
RTI-NS114-114	32 mm x 1 1/4" NPT	1 ½" x 1 ½"
RTI-NS112-1	40 mm x 1" NPT	1 ½" x 1"
RTI-NS112-114	40 mm x 1 1/4" NPT	1 ½" x 1 ¼"
RTI-NS112-112	40 mm x 1 ½" NPT	1 ½" x 1 ½"
RTI-NS2-112	50 mm x 1 ½" NPT	2" x 1 ½"
RTI-NS2-2	50 mm x 2" NPT	2" x 2"
RTI-NS212-2	63 mm x 2" NPT	2 ½" x 2"









Aluminum Nipple Socket, Female NPT Aluminum Nipple Socket, Male NPT

Part Number	Sizing	
RTI-FNSA34-12	20 mm x ½" NPT	³ / ₄ " x ¹ / ₂ "
RTI-FNSA34-34	20 mm x 3/4" NPT	3/4" x 3/4"
RTI-FNSA1-1	25 mm x 1" NPT	1" x 1"
RTI-FNSA114-114	32 mm x 1 1/4" NPT	1 1/4" x 1 1/4"
RTI-FNSA112-112	40 mm x 1 ½" NPT	1 ½" x 1 ½"
RTI-FNSA2-2	50 mm x 2" NPT	2" x 2"

Part Number	Sizing	
RTI-NSA34-12	20 mm x ½" NPT	3/4" X 1/2"
RTI-NSA34-34	20 mm x ¾" NPT	3/4" x 3/4"
RTI-NSA1-1	25 mm x 1" NPT	1" x 1"
RTI-NSA114-114	32 mm x 1 1/4" NPT	1 1/4" x 1 1/4"
RTI-NSA112-112	40 mm x 1 ½" NPT	1 ½" x 1 ½"
RTI-NSA2-2	50 mm x 2" NPT	2" x 2"

Quick Branch Droplet, Female NPT



Part Number	Sizing	
RTI-QBT1-12	25 mm x ½" NPT	1" x ½"
RTI-QBT114-12	32 mm x ½" NPT	1 1/4" x 1/2"
RTI-QBT112-12	40 mm x ½" NPT	1 ½" x ½"
RTI-QBT112-34	40 mm x ³ / ₄ " NPT	1 ½" x ¾"
RTI-QBT2-12	50 mm x ½" NPT	2" x ½"
RTI-QBT2-34	50 mm x ³ / ₄ " NPT	2" x ¾"
RTI-QBT212-12	63 mm x ½" NPT	2 ½" x ½"
RTI-0BT212-34	63 mm x 3/4" NPT	2 ½" x ¾"

Quick Branch Droplet



Part Number	Sizing	
RTI-QB1-12	25 mm x 16 mm	1" x ½"
RTI-QB114-12	32 mm x 16 mm	1 1/4" x 1/2"
RTI-QB112-12	40 mm x 16 mm	1 ½" x ½"
RTI-QB2-12	50 mm x 16 mm	2" x ½"





Part Number	Sizing
RTI-DPM34-5-38	3/4" inlet x (5) 3/8" outlets
RTI-DPM34-5-12	3/4" inlet x (5) 1/2" outlets

Aluminum Manifolds (90°) Aluminum Manifolds (45°)

Part Number	Sizing
RTI-M12-1-12	1 Port Manifold, ½" in, (1) ½" out
RTI-M12-3-12	3 Port Manifold, ½" in, (3) ½" out
RTI-M12-4-12	4 Port Manifold, ½" in, (4) ½" out
RTI-M34-4-1234	4 Port Manifold, 3/4" in, (2) 1/2" x (2) 3/4" out
RTI-M34-5-1234	5 Port Manifold, 3/4" in, (3) 1/2" x (2) 3/4" out
RTI-M34-7-1234	7 Port Manifold, ¾" in, (5) ½" x (2) ¾" out

Flexible Hose

Part Number	Sizing	
RTI-FEH34	20 mm	3/4"
RTI-FEH1	25 mm	1
RTI-FEH114	32 mm	1 1/4"
RTI-FEH112	40 mm	1 ½"
RTI-FEH2	50 mm	2"



Flexible Hose, NPT Threaded

Part Number	Sizing
RTI-FEH34-NPT	3⁄4" NPT
RTI-FEH1-NPT	1" NPT

Pipe Support Brackets

Part Number	Sizing	
RTI-PB12 (10 pack)	16 mm	1/2"
RTI-PB34 (10 pack)	20 mm	3/4"
RTI-PB1 (10 pack)	25 mm	1"
RTI-PB114 (10 pack)	32 mm	1 1/4"
RTI-PB112 (10 pack)	40 mm	1 1/2"
RTI-PB2 (10 pack)	50 mm	2"
RTI-PB212 (10 pack)	63 mm	2 ½"



Bracket Wall Spacers

Part Number	Sizing		
RTI-BWS34-114 (10 pack)	20-32 mm	3/4" to 1 1/4"	
RTI-BWS112-212 (10 pack)	40-63 mm	1 ½" to 2 ½"	







Ball Valve, Female NPT

Part Number	Sizing				
RTI-BVF12-12	16 mm x ½" NPT	½" X ½"			

Ball Valve, Male NPT

Part Number	Sizing				
RTI-BVM12-12	16 mm x ½" NPT	½" X ½"			

Nut Wrench

Part Number	Sizing				
WRENCH 16/20	16-20 mm	½" to ¾"			
WRENCH 25/32	25-32 mm	1" to 1 1/4"			
WRENCH 40/50	40-50 mm	1 ½" to 2"			
WRENCH 63	63 mm	2 1/2"			



Male Threaded Spigot

Part Number	Sizing			
RTI-MTS34-12	20 mm x ½" NPT	3/4" X 1/2"		
RTI-MTS34-34	20 mm x ¾" NPT	3⁄4" x 3⁄4"		
RTI-MTS1-1	25 mm x 1" NPT	1" x 1"		
RTI-MTS112-112	40 mm x 1 ½" NPT	1 ½" x 1 ½"		
RTI-MTS212-2	63 mm x 2" NPT	2 ½" x 2"		

Pipe/Fitting Insertion Meter

Part Number	Sizing				
RTI-PFIM	16-80 mm	½" to 3"			



Chamfering Cone Piece & Chamfering Tool

Part Number	Sizing				
RTI-CT12-2	16-50 mm	½" to 2"			
RTI-CT212-4	63-110 mm	2 ½" to 4"			



10 YEAR WARRANTY

Following the high quality performances of RTi products, we offer our customers a 10 year warranty against possible damages due to faulty materials of aluminum pipes or blue pipe fittings.

Guarantee terms and conditions: Use original parts and spare parts only. Execute the installation following the instructions and guide lines supplied in this catalogue. A test certificate must be done after first plant test. Do no use components beyond their service limits. Protect the plant from shocks, vibrations or corrosive situations. Before forwarding any complaint, check the damaged parts and/or the site conditions. Guarantee is limited to the component replacement only. Complaints are to be shipped to RTi following the standard procedure. Submit all complaints to RTi following the standard procedure.



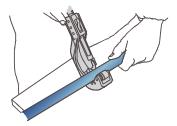


Installation Guide

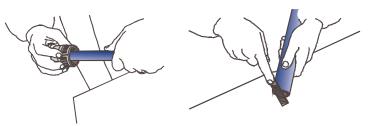
Tools needed:



- Chamfering cone*
- Pipe specific wrench*
- Depth gauge*
- Universal plier*
- Drill or hole saw
- Screwdriver
- Gasket lubricant*
- Hexagonal wrench
- Marker/pen*
- Pipecutter
- Deburring tool
- Make a neat and straight cut at the desired size. Afterwards check the pipe's surface condition; there should not be any visible scratches, abrasions or dents which may cause leaks. The cut has to be done as straight as possible (90° to the pipe axis).



Chamfer the pipe's external surfaces and remove any rough edges along the inside diameter. Remove rough edges, pieces, and dust which may be present in the pipe to avoid future air line issues.



Fully tighten the ring nut to the area indicated by tightening the indicator arrow.



Unscrew the nut, which you just tightened, by making half a counter clock-wise turn. This will increase the distance between the body and the nut in the area indicated by the arrow. Mark the depth indicated by the socket depth gauge on the pipe with marker/pen.



Mark the depth indicated by the socket depth meter on the pipe.

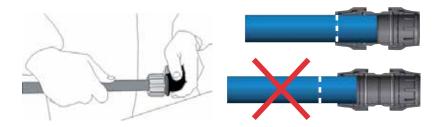




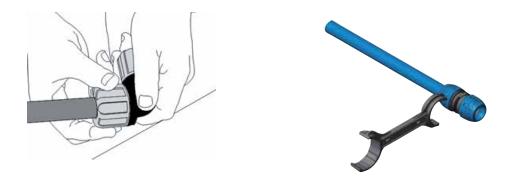


Installation Guide, cont'd.

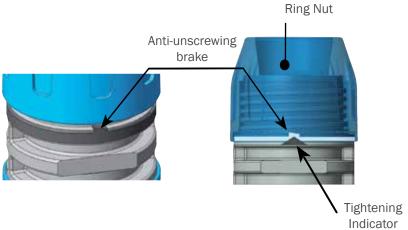
Slide the pipe into the fitting, pushing it until it stops at the end of the socket. Lubricate the end of the pipe and contact surface of O-ring with liquid dish soap and water, or petroleum grease. Do not use oils or greases of questionable compatibility. Contact factory if needed.



Fully tighten the ring nut by hand, or rotate up to 180° (at most!) using pin wrench.



A correct fitting tightening will bring the ring nut base to stop around the middle of the tightening indicator. The nut brake will act as anti-screwing in the case of light vibrations. Do not over tighten!







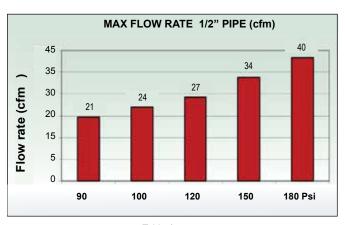
Flow Rates/Pressure Drop Tables

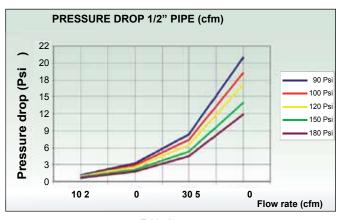
Note: Perfect Air® blue pipe systems are mainly dedicated to compressed air distribution up to a maxiumum pressure of 200 PSI

The charts and graphs below illustrate the maximum suggested flow rate to prevent high velocity which will cause:

- a. Increase of turbolence with relative pressure drop;
- b. excessive noise above legal limits;
- c. reintrainment of any condensed liquid in the pipeline.

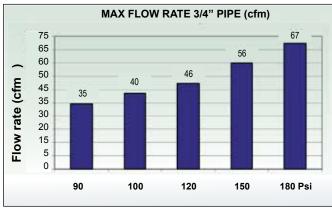
PIPE FLOW RATE TABLES (given for 100' of pipe)

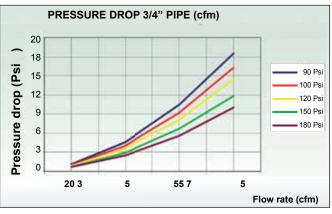




- Table 1a

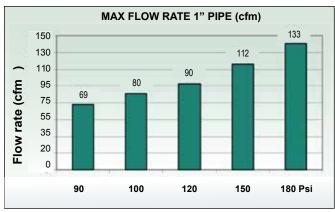


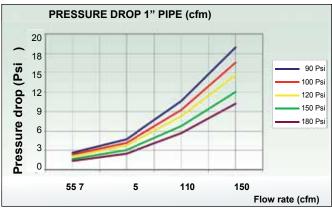




- Table 2a

- Table 2b

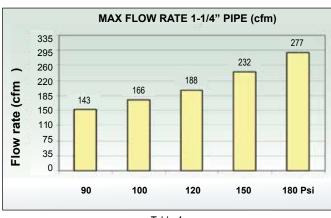


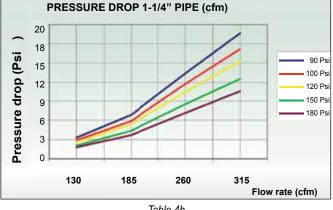


RTi

- Table 3a

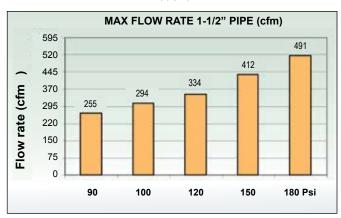


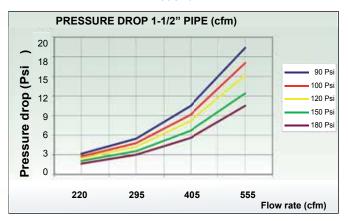






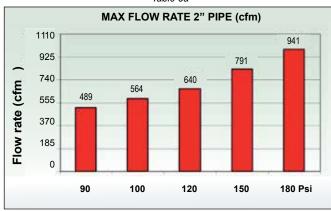


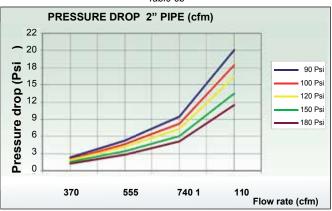




- Table 5a

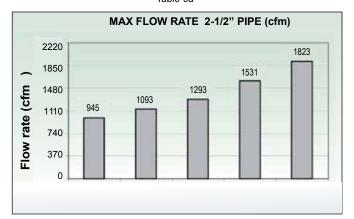
- Table 5b

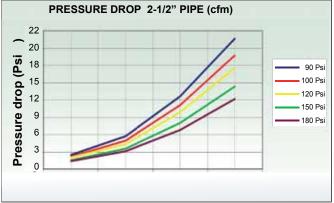




- Table 6a

- Table 6b









Chemical Compatibility

Compatibility with RTi Blue Pipe Materials

HEMICAL AGENTS							Compatibility with RTi Blue Pipe M		
MATERIALS present in piping systems	ALUMINUM	NBR (O-ring)	VITON * (O-ring)	Clamping ring (S/S)	PA (Polyamide)	PVC	Fittings	ALUMINUM pipe	Accessories
ACETALDEHYDE	В	D	Α	Α	Α	D	OK*	OK	ОК
ACETIC ACID 20%	В	В	В	Α	D	В		OK	
ACETONE	Α	D	D	Α	Α	D		OK	
ACETYLENE	Α	В	Α	Α	Α	Α	OK	OK	OK
AMMONIUM	В	Α	D	Α	Α	В	OK	OK	OK
BENZENE	В	D	Α	В	В	С	OK*	OK	OK
BORIC ACID	С	Α	Α	Α	В	Α			
BURNT LIME	Α	Α	Α	Α	Α	Α	OK	OK	OK
BUTANOL	Α	В	Α	Α	D	Α	OK		
BUTTER	Α	Α	Α	Α	Α	Α	OK	OK	OK
CARBON DIOXIDE	Α	Α	Α	Α	Α	Α	OK	OK	OK
CARBON MONOXIDE	Α	Α	Α	Α	Α	Α	OK	OK	OK
CAUSTIC SODA	С	В	Α	Α	В	Α	OK		OK
CHLOROFORM	В	D	Α	Α	Α	Α	OK*	OK	OK
CITRIC ACID	С	Α	Α	Α	Α	Α	OK		OK
CLHORIC ACID (20%)	D	D	D	D	D	Α			
DIESEL GAS	В	Α	Α	В	Α	-	OK	OK	
ETHANOL	Α	Α	Α	В	В	Α	OK	OK	OK
ETHYLENE GLYCOL	Α	Α	Α	В	Α	Α	OK	OK	OK
FAT ACIDS	Α	В	Α	Α	Α	Α	OK	OK	OK
FORMALDEHYDE 40%	В	В	Α	Α	Α	Α	OK	OK	OK
FUEL OIL	Α	Α	Α	Α	Α	-	OK	OK	
GLUCOSE	Α	Α	Α	Α	Α	Α	OK	OK	OK
GLYCERINE	Α	Α	Α	Α	Α	Α	OK	OK	OK
HEPTAN	Α	Α	Α	Α	Α	-	OK	OK	OK
HYDROGEN (GAS)	Α	Α	Α	Α	Α	Α	OK	OK	OK
METHYL ALCOHOL	В	Α	С	Α	В	Α	OK*	OK	OK
MILK	Α	Α	Α	Α	Α	Α	OK	OK	OK
MINERAL OIL	Α	Α	Α	Α	Α	-	OK	OK	
MOTOR OIL	Α	Α	Α	Α	Α	-	OK	OK	
NATURAL GAS (METHANE)	Α	Α	Α	Α	Α	Α	OK	OK	OK
NITRIC ACID (20%)	С	D	Α	В	D	Α			
NITROBENZENE	В	D	В	В	В	-		OK	
OLEIC ACID	Α	В	В	Α	В	Α	OK	OK	OK
OXALIC ACID	Α	С	Α	Α	В	Α	OK*	OK	OK
PETROL	В	Α	Α	Α	Α	Α	OK	OK	OK
PHENOL	Α	D	Α	В	D	D		OK	
POTASSIUM PERMANGANATE	В	С	Α	В	D	Α			
PROPYLENE GLYCOL	В	Α	Α	В	Α	Α	OK	OK	OK
SILICONE	Α	Α	Α	Α	Α	Α	OK	OK	OK
SUGAR	Α	Α	Α	Α	Α	Α	OK	OK	OK
SULPHURIC ACID	С	D	В	D	D	Α			
TANNIC ACID	С	Α	Α	Α	С	Α			
TARTARIC ACID	В	Α	Α	В	В	Α	OK	OK	OK
TOLUENE	Α	D	С	В	В	D		OK	
UREA	В	В	Α	В	Α	Α	OK	OK	OK
VASELINE	Α	Α	Α	Α	Α	Α	OK	OK	OK
VINEGAR	D	В	Α	Α	Α	Α	OK		OK
XYLENE	Α	D	В	В	В	Α	OK*	OK	OK

Legend
Compatibility between chemical agents and materials
Compatibility with RTI Blue Pipe products

A = Optimum; B = Good; C = Modest; D = Poor; OK Compatible NOT Compatible

* VITON O- Ring

Unavailable data

Note: If you need further information on compatibilities, please contact factory



