

# Chlorine Dioxide Compatibility Assessment

## Key

- Excellent - no change at all in the device
- Good - slight cosmetic change/ decolourisation – material/device still fully functional
- Fair – slight damage is observed– material/device still fully functional
- Poor – visible pitting, breaking, brittle

## METALS

Materials of construction	1 (Excellent)	2 (Good)	3 (Fair)	4 (Poor)
Stainless Steel 317 (Pure)	X			
Stainless Steel 316 (pure, fully austenitic with no ferric content)	X			
Stainless Steel 304 (High grade, low ferric content)	X			
Hastelloy	X			
Titanium	X			
Aluminium			X	
Aluminium (Anodised)				X
Brass				X
Copper				X
Chrome				X
Mild Steel				X

## PLASTICS

Materials of construction	1 (Excellent)	2 (Good)	3 (Fair)	4 (Poor)
Perfluoroelastomer	X			
PEEK	X	X		
Polypropylene	X			
PVDF	X	X		
Polycarbonate		X		
Polysulphone (natural)		X		
Polysulphone (white)		X		
PET-P	X			
PMMA	X			
Polyamide	X			
Polyethylene	X			
Polyoxymethylene	X			
Acetal			X	
ABS				X
Polymethylpentene (TPX) (PMP)		X		

## PLASTICS

Materials of construction	1 (Excellent)	2 (Good)	3 (Fair)	4 (Poor)
Noryl	X			
Polystyrene and Noryl	X			
PVC	X			
Polyparaxylylene	X			
Glass	X			
Viton - GF	X			
Sapphire glass	X			
Glass fibre	X			
Elastomeric PTFE		X		
Fluorocarbon		X		
Viton		X		
Carbon fibre	X			
Buna-N				X
EPDM				X
Nylon			X	
Santoprene				X
Leather (red)				X
FPM rubber	X			

## OTHER MATERIALS

Materials of construction	1 (Excellent)	2 (Good)	3 (Fair)	4 (Poor)
PSJ Polystyrene			X	
KE-971 (silicon rubber)	X			
LG fibre	X			
Epoxy resin		X		
PVC + Polyurethane		X		
Isophthalic Neopethyl Glycol	X			
Polyester resin	X			
SEBS (Styrene Ethylene butylene copolymer)	X			
PTFE (blue)	X			
Acrylic glass (Poly Methyl Methacrylate)	X			

## STONE

Materials of construction	1 (Excellent)	2 (Good)	3 (Fair)	4 (Poor)
Marble	X			
Porcelain	X			
Quartz		X		
Quartzite		X		
Sandstone		X		
Limestone		X		
Slate	X			
Travertine	X			
Terracotta		X		

The above compatibility data has been collated as part of a generic overview which relates to the interaction of chlorine dioxide when in contact with various materials of construction. Where possible, the most prevalent materials have been tested internally under laboratory conditions, using Tristel's unique chlorine dioxide chemistry. The level of chlorine dioxide used in the studies ranged from 100 to over 1000 parts per million, with various product specific exposure techniques applied such as wiping, wrapping, immersion and destructive testing. The data generated may be relevant to material grades which are specific certain medical devices and equipment. In cases where in-house testing has not been performed a literature review has been undertaken to provide comparative data. Therefore, the data should be considered as a guide for overall compatibility and may not be relevant to a specific Tristel product when used with a specific device or surface.

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