

TRISTEL CHLORINE DIOXIDE MATERIAL COMPATIBILITY

Extensive material compatibility testing has been carried out on Tristel chlorine dioxide solutions on various types of medical device and surface component materials. The levels of chlorine dioxide used in the studies range from 100 to over 1000 parts per million, considering various formulations and exposure techniques applied such as wiping, immersion and destructive testing.

This document should be used as a guide for overall compatibility only and may not be relevant for every type or variant of a specific material. It is recommended to perform individual material compatibility testing to determine compatibility with a specific medical device or surface, as component materials can vary. Always consult the medical device manufacturer's care card, instructions for use and material compatibility approval list for approved cleaning agents and disinfectants.

MATERIAL	COMPATIBILITY RATING			
	EXCELLENT	GOOD	FAIR	POOR
METALS				
Aluminium – anodised		X		
Aluminium				X
Brass				X
Brass – chrome plated	X			
Copper				X
Mild Steel				X
Nickel		X		
NiMo(Cr) alloy / Hastelloy	X			
Silver				X
Stainless steel 1.4305 (AISI 303)			X	
Stainless steel 1.4301 (AISI 304)			X	
Stainless steel 1.4307 (AISI 304L)			X	
Stainless steel 1.4401 (AISI 316)		X		
Stainless steel 1.4438 (AISI 317L)	X			
Titanium	X			
Tungsten		X		
Zinc – chromium-plated	X			
PLASTICS				
Acrylonitrile butadiene styrene (ABS)		X		
Methyl acrylonitrile butadiene styrene (M-ABS)		X		
Polyamide 6 (PA6)	X			
Polyamide 6.6 (PA6.6)	X			
Polybutylene terephthalate (PBT)		X		
Polybutylene terephthalate (PBT)/Polycarbonate (PC) blend		X		
Polycarbonate (PC)		X		
Polycarbonate (PC)/Acrylonitrile butadiene styrene (ABS)	X			
Polyether ether ketone (PEEK)		X		
Polyetherimide (PEI)	X			
Polyethylene – high density (HDPE)	X			
Polyethylene – low density (LDPE)	X			
Polyethylene terephthalate (PET)	X			

MATERIAL	COMPATIBILITY RATING			
	EXCELLENT	GOOD	FAIR	POOR
PLASTICS				
Polyimide (PI)	X			
Polymethylmethacrylate (PMMA)	X			
Polymethylpentene (PMP)	X			
Polymethylpentene (PMP/TPX)		X		
Polyoelfin	X			
Polyoxymethylene (POM, Polyacetal)	X			
Polyparaxylene	X			
Polyphenylene ether (PPE)	X			
Polyphenylsulfone (PPSU)		X		
Polypropylene copolymer (PPC)		X		
Polypropylene homopolymer (PPH)	X			
Polystyrene (PS) – rigid			X	
Polysulfone (PSU)	X			
Polytetrafluoroethylene (PTFE)	X			
Polyurethane (PU) – rigid, 35A				X
Polyurethane (PU) – rigid, 90A			X	
Polyurethane (PU) – rigid, 95A		X		
Polyvinyl chloride – plasticized/flexible (PVC)		X		
Polyvinyl chloride – unplasticized/rigid (uPVC)	X			
Polyvinylidene fluoride (PVDF)	X			
Styrene ethylene butylene styrene copolymer (TPE-SEBS)	X			

RUBBER				
Fluoro rubber/elastomer (FKM/FPM)	X			
Silicone rubber	X			
Thermoplastic polyamide (TPE-A) – polyether block amide	X			
Thermoplastic Polyurethane (TPE-U/TPU)			X	
Thermoplastic vulcanizate (TPE-V) – PP/EPDM			X	

ADHESIVES / RESINS				
Acrylic resin	X			
Epoxy resin		X		
Epoxy resin – heat cured	X			
Silicone adhesive	X			

OTHER				
Glass	X			

KEY:

Excellent: No visible/tactile changes.

Good: Slight cosmetic changes such as mild discolouration.

Fair: Medium changes can be observed such as strong discolouration.

Poor: Degradation past the cosmetic state; early signs of pitting, stickiness, brittleness, or corrosion/oxidisation.