

PROTOMATIC

Restricted Materials List

Applicability

This list is referenced in World Class Industries Engineering Standard JDM H30. This document describes the restricted substances in subassemblies, parts, materials, components, batteries, merchandise and packaging (referred to as “products” i table below lists the threshold weight percent, any exemptions that may apply to the restriction, and examples of how the substance may be used. The examples given are not all inclusive. This list applies to all products, both direct and indirect, that are designed, manufactured or purchased worldwide either by World Class Industries or a supplier to World Class Industries. This includes, but is not limited to, all products marketed through Portfolio Extensions and Officially Licensed Merchandise.

In addition to the chemical restrictions outlined in this document, chemical restrictions in any applicable World Class Industries Standards shall be complied with (e.g. JDM F13). If this List and a World Class Industries Standard limit the same chemical, the most restrictive limit shall apply.

Compliance with the restrictions in this World Class Industries specific list does not relieve or diminish the obligation to comply with all applicable laws in the country and/or state where a product will be manufactured, imported and/or distributed. This includes, but is not limited to, the following laws:

RoHS –Restriction of Hazardous Substances

EU REACH –Registration, Evaluation, and Authorization of Chemicals

[EU REACH Substance of Very High Concern \(SVHC\) List \(Candidate List\)](#)

[EU REACH Annex XVII](#)

Consumer Product Laws (e.g. United States Consumer Product Safety Improvement Act)

WEEE –Waste Electrical and Electronic Equipment

Battery Restrictions

Packaging Restrictions

Other national, state or local laws as applicable

Responsibility

It is the responsibility of the manufacturer, importer and/or distributor to verify that the substances listed in Table 1, or any applicable law, are not in any World Class Industries products at or above mandated thresholds.

Restricted Materials List

<u>Substance/Item</u>	<u>Threshold Weight % (ppm)</u>	<u>Exemptions</u>	<u>Examples/uses</u>
Asbestos	Not Present (0)		Brake pads, gaskets, Clutch plates, parts.
Cadmium	Not Present (0)		electrical contacts
Cadmium/Compounds	Not Present (0)	Unless stated by part requirements	metal plating
Cadmium Compounds	0.01% (100)		Pigments. Batteries, plastic
Lead in paint and primer	0.06% (600)		Lacquer, primer, paint
Polychlorinated Biphenyls	not present (0)		Capacitors, transformers Lighting ballasts
Chlorinated Hydrocarbons (See attachment 1)	0.06% (600)		Solvents, adhesives, Pesticides, wood preservatives
Arsenic and its compounds	0.06% (600)		metal alloys
Hexavalent Chromium (CR+6) (Effective Date 1/1/17)	0.1% (1000)	Unless stated by part requirements	Electroplating metals, pigments
Cyanide and its compounds	Not present (0)		metal treatments. Insecticides
Ozone Depleting Substances (See attachment 2)	Not present (0)		Refrigeration, air Conditioning, heat pump Systems, solvents, Biocides
Radioactive Substances	Not present (above background level)	Luminescent dials, Fire Brick, zircon sand concrete blocks	Uncontrolled material contaminated with natural or man-made radionuclides from industrial processes. Scrap metal, semi-finished metal products.

Attachment 1

Chlorinated Hydrocarbons restricted from finished products

Substance/item	Chemical Abstract Service	Threshold	Exemptions
	(CAS) Number	Weight% (ppm)	
1,1 Dichloroethylene	75-35-4	0.06% (600)	
Pentachlorethane	76-01-7	0.06% (600)	
Methylene chloride	75-09-2	0.06% (600)	
Tetra chloromethane (Carbon Tetrachloride)	56-23-5	0.06% (600)	
1,1,1,2 Tetrachloroethane	630-20-6	0.06% (600)	
1,1,2,2 Tetrachloroethane	79-34-5	0.06% (600)	
Tetrachloroethylene	127-18-4	0.06% (600)	
Trichloromethane	67-66-3	0.06% (600)	
1,1,2 Trichloroethane	79-00-5	0.06% (600)	
Trichloroethylene	79-01-6	0.06% (600)	
1,1,1-Trichloroethane (TCA)	71-55-6	0.06% (600)	
Bis(chloromethyl) ether	542-88-1	0.06% (600)	
Pentachlorophenol	87-86-5	0.06% (600)	
Polychlorinated Phenois and their salts	Chemical class, no CAS number	0.06% (600)	

Attachment 2

Ozone Depleting Substances (ODSs) banned from finished products

Hydrochlorofluorocarbons and Isomers based on Montreal Protocol)	Chemical abstract # (CAS Number)
Trichlorofluoromethane	75-69-4
Dichlorodifluoromethane(CFC12)	75-71-8
Chlorotrifluoromethane(CFC13)	75-72-9
Pentachlorofluoroethane(CFC111)	354-56-3
Tetrachlorodifluoroethane(CFC112)	76-12-0
Trichlorotrifluoroethane(CFC113) 1,1,2 Trichloro-1,2,2 trifluoroethane	354-58-5;76-13-1
Dichlorotetrafluoroethane(CFC114)	76-14-2
Monochloropentafluoroethane(CFC115)	76-15-3
Heptachlorofluoropropane(CFC211)	422-78-6; 135401-87-5
Hexachlorodifluoropropane(CFC212)	3182-26-1
Pentachlorotrifluoropropane(CFC213)	2354-06-5; 134237-31-3
Tetrachlorotetrafluoropropane(CFC214)	29255-31-0
1,1,1,3-Tetrachlorotrifluoropropane	2268-46-4
Trichloropentafluoropropane(CFC215)	1599-41-3
1,1,1,Trichloropentafluoropropane	4259-43-2
1,2,3-Trichloropentafluoropropane	76-17-5
Dichlorohexafluoropropane (CFC216)	661-97-2
Monochloroheptafluoropropane(CFC217)	422-86-6
Bromochlorodifluoromethane (Halon1211)	353-59-3
Bromotrifluoromethane(Halon1301)	75-63-8
Dibromotetrafluoroethane(Halon2402)	124-73-2
Carbon Tetrachloride (Tetrachloromethane)	56-23-5
1,1,1 trichloroethane and its isomers except 1,1,2 trichloroethane	71-55-6
Bromomethane (methyl bromide)	74-83-9
Bromodifluoromethane and isomers (HBFCs)	1511-62-2
Dichlorofluoromethane (HCFC 21)	75-43-4
Chlorodifluoromethane (HCFC 22)	75-45-6
Chlorofluoromethane (HCFC 31)	593-70-4
Tetrachlorofluoroethane (HCFC 121)	134237-32-4
1,1,1,2 tetrachloro-2fluoroethane (HCFC 121a)	354-11-0
1,1,2,2, tetrachloro 1 fluoroethane	354-14-3
Trichlorodifluoroethane (HCFC 122)	41834-16-6
1,2,2, trichloro 1,1 difluoroethane	354-21-2
Dichlorotrifluoroethane (HCFC 123)	34077-87-7
Dichloro 1,1,2-trifluoroethane	90454-18-5
2,2, dichloro 1,1,1, trifluoroethane	306-83-2
1,2, dichloro 1,1,2 trifluoroethane (HCFC-123a)	354-23-4

Attachment 2

Ozone Depleting Substances (ODSs) banned from finished products

	Chemical abstract # (CAS Number)
Hydrochlorofluorocarbons and Isomers based on Montreal Protocol)	
1,1, dichloro 1,2,2 trifluoroethane (HCFC-123b)	812-04-4
2,2, dichloro 1,1,2 trifluoroethane (HCFC 123b)	812-04-4
Chlorotetrafluoroethane (HCFC 124)	63938-10-3
2 chloro 1,1,1,2 tetrafluoroethane	2837-89-0
1 chloro 1,1,2,2, tetrafluoroethane (HCFC 124a)	354-25-6
Trichlorofluoroethane (HCFC 131)	27154-33-2; (134237-34-6)
1 Fluoro 1,2,2, trichloroethane	354-28-4
1,1,1, trichloro 2 fluoroethane (HCFC131b)	811-95-0
Dichlorodifluoroethane (HCFC 132)	25915-78-0
1,2, dichloro 1,1 difluoroethane (HCFC 132b)	1649-08-7
1,1, dichloro 1,2 difluoroethane (HCFC 132c)	1842-05-3
1,1 dichloro 2,2 difluoroethane	471-43-2
1,2 dichloro 1,2 difluoroethane	431-06-1
Chlorotrifluoroethane (HCFC 133)	1330-45-6
1 chloro 1,2,2 trifluoroethane	1330-45-6
2 chloro 1,1,1, trifluoroethane (HCFC 133a)	75-88-7
Dichlorofluoroethane (HCFC 141)	1717-00-6; (25164-88-8)
1,1, dichloro 1 fluoroethane (HCFC 141b)	1717-00-6
1,2, dichloro 1 fluoroethane	430-57-9
Chlorodifluoroethane (HCFC 142)	25497-29-4
1 chloro 1, 1 difluoroethane (HCFC142b)	75-68-3
1 chloro 1,2 difluoroethane (HCFC142a)	25497-29-4
Hexachlorofluoropropane (HCFC 221)	134237-35-7
Pentachlorodifluoropropane (HCFC 222)	134237-36-8
Tetrachlorotrifluoropropane (HCFC 223)	134237-37-9
Trichlorotetrafluoropropane (HCFC 224)	134237-38-0
Dichloropentafluoropropane (Ethyne, fluoro) (HCFC 225)	127564-92-5;(2713-09-9)
2,2, Dichloro 1,1,1,3,3 pentafluoropropane (HCFC 225a)	128903-21-9
2,3, Dichloro 1,1,1,2,3, pentafluoropropane (HCFC 225ba)	422-48-0
1,2, Dichloro 1,1,2,3,3, pentafluoropropane (HCFC 225bb)	422-46-6
3,3, Dichloro 1,1,1,2,2 pentafluoropropane (HCFC 225ca)	422-56-0
1,3 Dichloro 1,1,2,2,3 pentafluoropropane (HCFC 225cb)	507-55-1
1,1, Dichloro 1,2,2,3,3 pentafluoropropane (HCFC 225cc)	13474-88-9
1,2,Dichloro 1,1,3,3,3, pentafluoropropane (HCFC 225da)	431-86-7
1,3, Dichloro 1,1,2,3,3 pentafluoropropane (HCFC 225ea)	136013-79-1
1,1, Dichloro 1,2,3,3,3, pentafluoropropane (HCFC 225eb)	111512-56-2
Chlorohexafluoropropane (HCFC 226)	134308-72-8
Pentachlorofluoropropane (HCFC 231)	134190-48-0
Tetrachlorodifluoropropane (HCFC 232)	134237-39-1

Attachment 2

Ozone Depleting Substances (ODSs) banned from finished products

Hydrochlorofluorocarbons and Isomers based on Montreal Protocol)	Chemical abstract # (CAS Number)
Trichlorotrifluoropropane (HCFC 233)	134237-40-4
1,1,1, trichloro 3,3,3 trifluoropropane	7125-83-9
Dichlorotetrafluoropropane (HCFC 234)	127564-83-4
Chloropentafluoropropane (HCFC 235)	134237-41-5
1 chloro 1,1,3,3,3, pentafluoropropane	460-92-4
Tetrachlorofluoropropane (HCFC 241)	134190-49-1
Trichlorodifluoropropane (HCFC 242)	134237-42-6
Dichlorotrifluoropropane (HCFC 243)	134237-43-7
1,1, dichloro-1,2,2 trifluoropropane	7125-99-7
2,3, dichloro- 1,1,1-trifluoropropane	338-75-0
3,3 Dichloro 1,1,1 trifluoropropane	460-69-5
Chlorotetrafluoropropane (HCFC 244)	134190-50-4
3 chloro 1,1,2,2, tetrafluoropropane	679-85-6
Trichlorofluoropropane (HCFC 251)	134190-51-5
1,1,3 trichloro 1 fluoropropane	818-99-5
Dichlorodifluoropropane (HCFC 252)	134190-52-6
Chlorotrifluoropropane (HCFC 253)	134237-44-8
3 chloro 1,1,1 trifluoropropane (HCFC 253fb)	460-35-5
Dichlorofluoropropane (HCFC 261)	134237-45-9
1,1 dichloro 1 fluoropropane	7799-56-6
Chlorodifluoropropane (HCFC 262)	134190-53-7
2 chloro 1,3 difluoropropane	102738-79-4
Chlorofluoropropane (HCFC 271)	134190-54-8
2 chloro 2 fluoropropane	420-44-0