

**PARKER HANNIFIN CORPORATION, CHOMERICS DIVISION
PRODUCT/PACKAGING
ENVIRONMENTAL QUALITY REQUIREMENTS**

PURPOSE

The purpose of this document is to communicate Environmental Quality Requirements for materials and packaging supplied to Parker Hannifin Corporation, Chomerics Division (Chomerics).

- All materials and packaging supplied to Chomerics must comply with Sections A through E.
- Materials supplied to Chomerics must comply with one or more of Sections F through I where specifically called out on the purchase order.
- Any exceptions to applicable Sections need to be communicated back to the Buyer or Requestor as appropriate.
- Unless exceptions are noted, it is assumed materials and packaging are compliant with all applicable Sections.

A. ROHS (Restriction Of the use of certain Hazardous Substances) – EU Directive 2002/95/EC

- Six chemicals/chemical categories must not be present in homogeneous materials above the following limits.
 - Cadmium <100 ppm.
 - Hexavalent Chromium, Mercury, Lead, Poly Brominated Biphenyls (PBB, Poly Brominated Diphenyl Ethers (PBDE) <1,000 ppm.
- Does not apply to packaging materials.
 - (a) Homogeneous materials are materials that cannot be broken down into their component parts (e.g., copper foil, coatings, and coated fabrics).

B. PFOS (Perfluorooctanesulfonates) Ban in Textiles and Consumer Products – EU Directive 2006/122/EC

- PFOS concentrations must not exceed the following limits in parts and materials supplied to Chomerics:
 - 0.005% in mixtures (such as paints, caulks)
 - 0.1% in articles
 - 1 ug/square meter in coated materials.
- Does not apply to packaging materials.

C. REACH (Registration, Evaluation, and, Authorisation, of Chemicals) – EU Directive 2006/1907/EC

- All Substances in non-articles are or will be pre-Registered or Registered by the Supplier, or their upstream Suppliers, and must be disclosed to Chomerics.
- Concentration of Substances of Very High Concern (SVHC) in article material(s) must be disclosed to Chomerics.

(a) Article – A material given a specific shape, surface, or design that determines its function (such as cured elastomers, gaskets, and sheetstock).

(b) Substance – A chemical including impurities, such as metals and solvents.

(c) Substances of Very High Concern (SVHC)– Chemicals that are:

Carcinogenic, Mutagenic, and/or toxic for Reproduction (CMR Chemicals)

Persistent, Bioaccumulative, and/or toxic (PBT chemicals) - may include metals such as nickel and arsenic and many halogenated chemicals.

ECHA Candidate List SVHCs as of 12/15/10

Visit http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm. For more information.

Chemical	EC CAS #	Date of Inclusion	Concentration if Present
4,4'- Diaminodiphenylmethane (MDA)	202-974-4	10/28/2008	
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	201-329-4	10/28/2008	
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	287-476-5	10/28/2008	
Anthracene	204-371-1	10/28/2008	
Benzyl butyl phthalate (BBP)	201-622-7	10/28/2008	
Bis (2-ethylhexyl)phthalate (DEHP)	204-211-0	10/28/2008	
Bis(tributyltin)oxide (TBTO)	200-268-0	10/28/2008	
Cobalt dichloride	231-589-4	10/28/2008	
Diarsenic pentaoxide	215-116-9	10/28/2008	
Diarsenic trioxide	215-481-4	10/28/2008	
Dibutyl phthalate (DBP)	201-557-4	10/28/2008	
Hexabromocyclododecane (HBCDD)	247-148-4 and 221-695-9	10/28/2008	
Lead hydrogen arsenate	232-064-2	10/28/2008	
Sodium dichromate	234-190-3	10/28/2008	
Triethyl arsenate	427-700-2	10/28/2008	
2,4-Dinitrotoluene	204-450-0	1/13/2010	
Aluminosilicate Refractory Ceramic Fibres	-	1/13/2010	
Anthracene oil	292-602-7	1/13/2010	

Anthracene oil, anthracene-low	292-604-8	1/13/2010	
Anthracene oil, anthracene paste	292-603-2	1/13/2010	
Anthracene oil, anthracene paste, anthracene fraction	295-275-9	1/13/2010	
Anthracene oil, anthracene paste, distn. Lights	295-278-5	1/13/2010	
Diisobutyl phthalate	201-553-2	1/13/2010	
Lead chromate	231-846-0	1/13/2010	
Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	235-759-9	1/13/2010	
Lead sulfochromate yellow (C.I. Pigment Yellow 34)	215-693-7	1/13/2010	
Pitch, coal tar, high temp.	266-028-2	1/13/2010	
Tris(2-chloroethyl)phosphate	204-118-5	1/13/2010	
Zirconia Aluminosilicate Refractory Ceramic Fibres	-	1/13/2010	
Acrylamide	201-173-7	3/30/2010	
Trichloroethylene	201-167-4	6/18/2010	
Boric acid	233-139-2 / 234-343-4	6/18/2010	
Disodium tetraborate, anhydrous	215-540-4	6/18/2010	
Tetraboron disodium heptaoxide, hydrate	235-541-3	6/18/2010	
Potassium dichromate	231-906-6	6/18/2010	
Ammonium dichromate	232-143-1	6/18/2010	
Potassium chromate	232-140-5	6/18/2010	
Sodium chromate	231-889-5	6/18/2010	
Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid	7738-94-5 - 13530-68-2	12/15/2010	
Chromium trioxide	1333-82-0	12/15/2010	
2-Ethoxyethanol	110-80-5	12/15/2010	
2-Methoxyethanol	109-86-4	12/15/2010	
Cobalt(II) diacetate	71-48-7	12/15/2010	
Cobalt(II) carbonate	513-79-1	12/15/2010	
Cobalt(II) dinitrate	10141-05-6	12/15/2010	
Cobalt(II) sulphate	10124-43-3	12/15/2010	

D. Hazard Communication – OSHA 1910.1200

- Each shipment of non-article material must be accompanied by an OSHA compliant Material Safety Data Sheet (MSDS).

- Each container must have compliant hazard communication labeling in English.
- All Substances in non-article material must be listed in the Toxic Substances Control Act (TSCA) List.
- Suppliers must inform Chomerics of TSCA 12(b) Export Notification Requirements for Substances in non-article material.

E. Requirements for Packaging Materials:

- The combined concentration of cadmium, lead, mercury, and hexavalent chromium must be <100 ppm in packaging materials supplied to Chomerics.
- PVC cable ties are prohibited.
- PVC packaging materials other than PVC cable ties are acceptable if the PVC content of the packaging materials is reported to Chomerics.

Packaging materials are defined as any material to be used for the containment, protection, handling, labeling, marking, delivery and presentation of Chomerics products. Returnable packaging materials to be used for Chomerics products are exempt.

F. Halogen Free – International Electrochemical Commission Halogen Free Specification 61249-2-21

- Total chlorine concentration in each homogeneous material <900 ppm.
- Total bromine concentration in each homogeneous material <900 ppm.
- Total halogen concentration in each homogeneous material <1,500 ppm.

G. Chomerics Substance Requirements

- **Level 1:** The following substances are banned for use in parts and materials delivered to Chomerics when this section is referenced in the Purchase Order.

Cadmium and cadmium compounds
 Cobalt Dichloride (used as a moisture indicator in dessicants)
 Lead and lead compounds
 Mercury and mercury Compounds
 Hexavalent chromium compounds
 Ozone Depleting Substances (ODS)
 Polychlorinated biphenyls (PCB)
 Polychlorinated naphtalenes (PCN)
 Polychlorinated terphenyls (PCT)
 Short-chain chlorinated parrafins (SCCP)

Polybrominated biphenyls (PBB)
 Polybrominated diphenylethers (PBDE)
 Tributyl tin (TBT)
 Triphenyl tin (TPT)
 Asbestos
 Formaldehyde
 Polyvinyl chloride (PVC) and PVC blends
 Beryllium oxide
 Hydrofluorocarbons (HFC), Perfluorocarbon (PFC)
 Specific Benzotriazole (CAS 3846-71-7)

- **Level 2:** The following Substances will become LEVEL 1 Substances on the given date for parts and materials delivered to Chomerics when this section is referenced in the Purchase Order.

Cobalt Dichloride (used in moisture indicator paper) – 4/1/11
 PFOS (Perfluorooctanesulfonates) in Packaging – 4/1/10
 Dibutyltin Tin (all applications including additives of plastics) – 7/1/11
 Dioctyl Tin (additives of textiles) – 7/1/11

- **Level 3:** The following substances will become LEVEL 2 substances in phases depending on the availability of alternative parts and materials that satisfy the intended uses. Chomerics must be informed if they are intentionally used, and are present in parts and materials delivered to Chomerics when this section is referenced in the Purchase Order.

Beryllium Copper
 Specific phthalates (DEHP, DBP, BBP, DINP, DNOP, DNHP)
 Other chlorinated organic compounds
 Other brominated organic compounds
 Azo compounds with the following CAS Numbers

92-67-1	106-47-8	838-88-0	95-80-7	97-56-3	119-90-4
92-87-5	615-05-4	120-71-8	137-17-7	99-55-8	119-93-7
95-69-2	101-77-9	101-14-4	90-04-0	139-65-1	
91-59-8	91-94-1	101-80-4	60-09-3	95-53-4	

- **Exemptions:** Specific exemptions apply for several substances in various levels that are too numerous to list here. Acceptance of materials and packaging on the basis of exemptions will be made on a case-by case basis.

H. Specific IMDS Declaration Requirements

The Supplier must disclose concentrations of all Substances contained in Article and Non-Article Materials sold to Chomerics.

REVISION HISTORY

Revision Number & Issue Date	Description
0, 7/3/08	Original Issue Date
1, 7/10/08	Purpose Section – Replaced “at the direction of the Chomerics Buyer” with

	“where specifically called out on the purchase order.”
2, 8/26/08	Added REACH and Hazard Communication Requirements to be applicable to all materials. Added IEC Halogen Free, and IBM REACH Requirements to be applicable as called for in the Purchase Order.
3, 1/20/09	Moved Beryllium Copper and Specific Phthalates from Level 1 to their correct Level 3 status. Added Specific Benzotriazole (CAS 3846-71-7) to Level 1 Changed Title of Section G
4, 4/28/09	Changes to Chomerics Substance Requirements: <ul style="list-style-type: none"> • Level 1 Additions – Cobalt Dichloride in dessicant agents, Ozone Depleting Substances • Level 2 Additions – PFOS in Packaging
5, 8/10/09	Added Automotive IMDS Specific Substance Requirements (Restricted and Forbidden)
6, 7/12/10	6/18/10 eight additional Candidate List SVHCs added to the ECHA website. Added these eight to flowdown. Refer customers to The ECHA site for more information with a link.
7, 10/18/10	Added Suppliers must inform Chomerics of TSCA 12(b) Export Notification requirements for all Substances in non-article materials.
8, 12/15/10	8 New Candidate List SVHCs Added