

NAMICS Green Procurement Standards Environmentally hazardous chemical substances list Ver. 16

No. 9740L024QA
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Table-1 Regulated substances

Reference No	Substances Name	CAS No .	Regulated Level	Scope	Allowable concentration	Analyzed target	Laws and regulations
P1001	Cadmium and its compounds	-	Level 1	Parts composed of metals containing zinc (e.g. brass, hot dip galvanizing, etc.)	less than 100 ppm	Raw materials, Other materials	EU RoHS Directive (EU)2015/863 Customer requirements
				All uses other than the above column	Less than 5ppm	Raw materials, Other materials	
P1002	Lead and its compounds	-	Level 1	All uses exemption-Glass, glass matrix compound	Less than 100ppm	Raw materials, Other materials	EU RoHS Directive (EU)2015/863 Customer requirements
M001	Lead and its compounds	-	Managed Substances	Glass, glass matrix compound	-	Raw materials, Other materials	
P1003	Mercury and its compounds	-	Level 1	All uses	Less than 2ppm	Raw materials, Other materials	EU RoHS Directive (EU)2015/863 Customer requirements
P1004	Hexavalent chromium compounds	-	Level 1	All uses	Less than 10ppm	Raw materials, Other materials	EU RoHS Directive (EU)2015/863 Customer requirements
P1005	Total-concentration of four heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained in packaging components and materials	-	Level 1	All indirect materials	"Less than 50 ppm" is determined as the allowable total-concentration of four heavy metals (cadmium, lead, mercury, and hexavalent chromium) contained in each part, ink, or paint that constitutes a package.	Indirect materials	EU Directive 94/62/EC on packing and packing waste and its amendments
P1006	Polybrominated biphenyls (PBB)	-	Level 1	All uses	Less than 1000ppm	All materials	EU RoHS Directive (EU)2015/863 Customer requirements
P1007	Polybrominated diphenylethers (PBDE) (including decabromodiphenyl ether [DecaBDE])	-	Level 1	All uses	Less than 1000ppm	All materials	EU RoHS Directive (EU)2015/863 Customer requirements
P1008	Hexabromocyclododecane (HBCDD)	25367-99-4 3194-55-6 134237-50-6 134237-51-7 134237-52-8	Level 1	All uses	Less than 50ppm	-	EU REACH Regulation(EC) No.1907/2006 The Stockholm Convention on POPs (EC) No 850/2004
P1009	Polychlorinated biphenyls (PCB)	-	Level 1	All uses	Less than 50ppm	-	Japan Chemical Substances Control Law
P1010	Polychlorinated naphthalenes (PCN)	-	Level 1	All uses	Less than 1000ppm	-	Japan Chemical Substances Control Law
P1011	Polychlorinated terphenyls (PCT)	-	Level 1	All uses	Less than 50ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1012	Short-chain chlorinated paraffins (SCCP) (Short-chain chlorinated paraffins with carbon chain length;10-13)	-	Level 1	All uses	Less than 1000ppm	-	EU POPs Regulation (EC) No 850/2004
P1013	Polyvinyl chloride (PVC) and PVC blends	-	Level 1	All uses (Exemption- Insulating tapes)	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1014	Hydrofluorocarbon (HFC), Perfluorocarbon (PFC), Sulfur hexafluoride(SF6)	-	Level 1	All uses	Less than 1000ppm	-	EU Regulation (EC) No.842/2006
P1015	Ozone depleting substances (ODS)	-	Level 1	All uses	Less than 1000ppm	-	EU Regulation (EC) No.2037/2000
P1016	Hydrochlorofluorocarbon (HCFC)	-	Level 1	All uses	Less than 1000ppm	-	EU Regulation (EC) No.1005/2009
P1017	Perfluorooctane sulfonates (PFOS)	-	Level 1	All uses	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1018	Perfluorooctanoic Acid (PFOA) and individual salts and esters of PFOA	refer to Appendix-1.1	Level 1	All uses	Less than 1000ppm	-	Norway Product regulations
P1019	Trisubstituted organotin compounds (including tributyltin (TBT) compounds and triphenyltin (TPT) compounds)	-	Level 1	All uses	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1020	Diocetyl tin (DOT) compounds	-	Level 1	All uses	Less than 1000ppm of the tin contained in materials	-	EU REACH Regulation(EC) No.1907/2006 Annex Customer requirements
P1021	Beryllium oxide	-	Level 1	All uses	Less than 1000ppm	-	EU WEEE Directive 2002/96/EC
P1022	Cobalt dichloride	7646-79-9	Level 1	All uses	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1023	Arsenic and its compounds	-	Level 1	Antifoam agents or firing agents for LCD panels (including cover glasses, touchscreens, and backlights)	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Customer requirements
P2003	Arsenic and its compounds	-	Level 2	All uses other than the above column	Less than 1000ppm	-	

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Table-1 Regulated substances

Reference No	Substances Name	CAS No .	Regulated Level	Scope	Allowable concentration	Analyzed target	Laws and regulations
P1024	Asbestos	-	Level 1	All uses	Less than 1000ppm	-	Germany Chemicals Prohibition Ordinance
P1025	Specific azo compounds (Azodyes that form specific amine compounds and specific amine compounds.)	refer to Appendix-1.2	Level 1	All uses	Less than 30ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1026	Formaldehyde	50-00-0	Level 1	The wooden products made from fiberboard, particleboard, or plywood, which are employed in products (e.g. speakers and racks)	[With a chamber method] Concentration in the air: Equal to or less than 0.1 ppm	-	Germany Chemicals Prohibition Ordinance
R001	Formaldehyde	50-00-0	Reduced Substances	All uses other than the above column	-	-	
P1027	Benzenamine, N-phenyl-, reaction products with styrene and 2,4,4-trimethylpentene (BNST)	-	Level 1	All uses	Less than 1000ppm	-	Canada Prohibition of Certain Toxic Substances Regulations
P1028	2-benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	Level 1	All uses	Less than 1000ppm	-	Japan Chemical Substances Control Law
P1029	Dimethyl fumarate (DMF)	624-49-7	Level 1	All uses	Less than 0.1ppm	-	EU REACH Regulation(EC) No.1907/2006
P1030	Specific Polycyclic aromatic hydrocarbons (PAHs)	refer to Appendix-1.3	Level 1	All uses	Less than 1ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex Customer requirements
P1031	Benzene	71-43-2	Level 1	All uses	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Annex
P1032	Hexachlorobenzene	118-74-1	Level 1	All uses	Less than 1000ppm	-	EU POPs Regulation Annex
P1033	Conflict Minerals (Gold, Tin, Tantalum and Tungsten which are produced from the Democratic Republic of the Congo or any adjoining countries ("DRC Countries"))	-	Level 1	All uses	Not intentionally added	-	US Financial Regulatory Reform
P1034	Radioactive substances [Uranium (U), Plutonium (Pu), Radon (Rn),Americium (Am), Thorium(Th) , Cesium(Cs) , Strontium (Sr),etc]	-	Level 1	All uses	Less than 1000ppm	-	Japan Laws Concerning the Prevention from Radiation Hazards due to Radioisotopes and Others
P1035	Red phosphorus / Yellow phosphorus	-	Level 1	All uses	Less than 1000ppm	-	Customer requirements
P1036	Specific phthalates (DEHP/DBP/BBP/DIBP)	refer to Appendix-1.4	Level 1	All uses	Less than 50ppm	All materials	EU RoHS Directive (EU)2015/863 Customer requirements
P2001	Tris(2-chloroethyl) phosphate (TCEP) Tris (1-chloro-2-propyl) phosphate (TCPP) Tris(1,3-dichloro-2-propyl)phosphate (TDCPP)	115-96-8 13674-84-5 13674-87-8	Level 2	All uses	Less than 1000ppm	-	EU REACH Regulation(EC) No.1907/2006 Customer requirements
P2002	Dibutyltin (DBT) compounds	-	Level 2	All uses	Less than 1000ppm of the tin contained in materials	-	EU REACH Regulation(EC) No.1907/2006 Annex
P2003	Perfluorooctanoic acid (PFOA) and its salts and related substances The following substances are excluded: • C ₈ F ₁₇ -X (X = F, Cl, Br) • C ₈ F ₁₇ -C(=O)OH, C ₈ F ₁₇ -C(=O)O-X'又及C ₈ F ₁₇ -CF ₂ -X' (X' = any group, including salts).	-	Level 2	All uses	25 ppb of PFOA including its salts or 1000 ppb (1 ppm) of one or a combination of PFOA-related substances.	-	EU REACH Regulation(EC) No.1907/2006 Annex

Table-2 Reduced substances
***R0010 : Please refer to Table-1.**

Reference No	Substances Name	CAS No .	Regulated Level	Scope	Allowable concentration	Analyzed target	Laws and regulations
R002	Beryllium copper	-	Reduced Substances	All uses	1000 ppm	-	Customer requirements
R003	Other phthalates (Exemption-Regulated Substances)	refer to Appendix-2.1	Reduced Substances	All uses	1000 ppm	-	Customer requirements
R004	Boric acid, Specific sodium borates	refer to Appendix-2.2	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R005	4-(1,1,3,3-tetramethylbutyl) phenol	140-66-9	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R006	Bis(2-methoxyethyl) ether	111-96-6	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) Annex
R007	N,N-dimethylacetamide (DMAC)	127-19-5	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R008	Ethylene glycol dimethyl ether (EGDME)	110-71-4	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R009	Perchlorates	-	Reduced Substances	All uses	1000 ppm	-	California dtsc regulations
R010	Trixylyl phosphate (TXP)	25155-23-1	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R011	2-(2H-benzotriazol-2-yl)-4, 6-ditertpentylphenol (UV-328)	25973-55-1	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R012	2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (DOTE)	15571-58-1	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R013	Reaction mass of 2-ethylhexyl 10-ethyl-4,4-dioctyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate and 2-ethylhexyl 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-8-oxa-3,5-dithia-4-stannatetradecanoate (reaction mass of DOTE and MOTE)	-	Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) No.1907/2006
R014	Bisphenol A	80-05-7	Reduced Substances	All uses	25 ppm	-	EU REACH Regulation(EC) Annex Customer requirements
R015	REACH SVHC (Substances of Very High Concern) *Follow the latest SVHC list https://echa.europa.eu/candidate-list-table		Reduced Substances	All uses	1000 ppm	-	EU REACH Regulation(EC) Customer requirements

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Table-3 Managed Substances
***M001 : Please refer to Table-1. M002, M004: Missing number.**

Reference No	Substances Name	CAS No .	Classification	Scope	Allowable concentration	Analyzed target	Laws and regulations
M003	Other Polycyclic aromatic hydrocarbons (PAHs) (Exemption-Regulated Substances)	refer to Appendix-3.1	Managed Substances	All uses	-	-	Customer requirements
M004	Antimony and its compounds	-	Managed Substances	All uses	-	-	Customer requirements
M006	Beryllium and its compounds (Exemption - Beryllium oxide and Beryllium copper)	-	Managed Substances	All uses	-	-	Customer requirements
M007	Bismuth and its compounds	-	Managed Substances	All uses	-	-	Customer requirements
M008	Other brominated organic compounds (Exemption - PBB,PBDE)	-	Managed Substances	All uses	-	-	Customer requirements
M009	Other chlorinated organic compounds (Exemption-PCB, PCN,PCT,SCCP)	-	Managed Substances	All uses	-	-	Customer requirements
M010	Cobalt and its compounds (Exemption - Cobalt dichloride)	-	Managed Substances	All uses	-	-	Customer requirements
M011	Fluoride and its compounds excluding the regulated substances specified by these standards	-	Managed Substances	All uses	-	-	Customer requirements
M012	Iodine and its compounds excluding the regulated substances specified by these standards	-	Managed Substances	All uses	-	-	Customer requirements
M013	chemSHERPA Declarable Substance Ver. (latest Version) excluding the regulated substances specified by these standards	refer to Appendix-3.2	Managed Substances	All uses	-	-	Joint Article Management Promotion-consortium (JAMP)
M014	Low molecular siloxane (20 mer)	-	Managed Substances	All uses	-	-	Customer requirements
M015	Nanomaterials (Particle size : 1~100nm)	-	Managed Substances	All uses	-	-	Customer requirements
M016	Phosphorus and its compounds (Exemption-Red / Yellow phosphorus)	-	Managed Substances	All uses	-	-	Customer requirements
M017	Cyan compounds	-	Managed Substances	All uses	-	-	Customer requirements
M018	Sulfur and its compounds	-	Managed Substances	All uses	-	-	Customer requirements
M019	Zinc and its compounds	-	Managed Substances	All uses	-	-	Customer requirements
M020	Titanium and its compounds	-	Managed Substances	All uses	-	-	Customer requirements
M021	Volatile organic compounds (VOCs)	refer to Appendix-3.3	Managed Substances	All uses	-	-	Customer requirements
M022	Rare earth metals	refer to Appendix-3.4	Managed Substances	All uses	-	-	Customer requirements

Appendix-1.1 List of Perfluorooctanoic Acid (PFOA) and individual salts and esters of PFOA

Substances Name	CAS No.
Pentadecafluorooctanoic acid	335-67-1
Ammonium pentadecafluorooctanoate	3825-26-1
Sodium pentadecafluorooctanoate	335-95-5
Potassium perfluorooctanoate	2395-00-8
Silver(1+) perfluorooctanoate	335-93-3
Pentadecafluorooctyl fluoride	335-66-0
Methyl perfluorooctanoate	376-27-2
Ethyl perfluorooctanoate	3108-24-5

Appendix-1.2 Specific azo compounds (Azodyes that form specific amine compounds and specific amine compounds.)

Substances Name	CAS No.
4-aminodiphenyl	92-67-1
benzidine	92-87-5
4-chloro-o-toluidine; 4-chloro-2-methylaniline	95-69-2
2-naphthylamine	91-59-8
o-aminoazotoluene	97-56-3
2-amino-4-nitrotoluene; 5-nitro-o-toluidine	99-55-8
p-chloroaniline	106-47-8
2,4-diaminoanisole	615-05-4
4,4'-diaminodiphenylmethane; 4,4'-methylenedianiline	101-77-9
3,3'-dichlorobenzidine	91-94-1
3,3'-dimethoxybenzidine	119-90-4
3,3'-dimethylbenzidine	119-93-7
3,3'-dimethyl-4,4'-diaminodiphenylmethane; 4,4'-diamino-3,3'-diphenylmethane	838-88-0
p-cresidine; 6-methoxy-m-toluidine	120-71-8
4,4'-methylene-bis-(2-chloroaniline)	101-14-4
4,4'-oxideaniline	101-80-4
4,4'-thiodianiline; 4,4'-diaminodiphenylsulfide	139-65-1
o-toluidine	95-53-4
2,4-tolylenediamine; 4-methyl-m-phenylenediamine	95-80-7
2,4,5-trimethylaniline	137-17-7
o-anisidine	90-04-0
4-aminoazobenzene	60-09-3

Appendix-1.3 List of Specific Polycyclic aromatic hydrocarbons(PAHs)

Substances Name	CAS No.
Benzo[a]pyrene	50-32-8
Benzo[e]pyrene	192-97-2
Benzo[a]anthracene	56-55-3, 1718-53-2
Chrysene	218-01-9
Benzo[b]fluoranthene	205-99-2
Benzo[j]fluoranthene	205-82-3
Benzo[k]fluoranthene	207-08-9
Dibenzo[a,h]anthracene	53-70-3

Appendix-1.4 List of Specific phthalates (DEHP/DBP/BBP/DIBP)

Substances Name	CAS No.
Bis (2-ethylhexyl)phthalate; Di (2-ethylhexyl) phthalate	117-81-7
Dibutyl phthalate; Di-n-butyl phthalate	84-74-2
Benzyl butyl phthalate; Butyl benzyl phthalate	85-68-7
Diisobutyl phthalate; Di-i-butyl phthalate	84-69-5

Appendix-2.1 List of Other phthalates

Substances Name	CAS No.
Di-isononyl phthalate; Diisononyl phthalate	28553-12-0 68515-48-0
Di-isodecyl phthalate; Diisodecyl phthalate	26761-40-0 68515-49-1 117-84-0
Di-n-octyl phthalate	84-75-3
Di-n-hexyl phthalate	71888-89-6
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	68515-42-4
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	117-82-8
Bis(2-methoxyethyl) phthalate	-
Other phthalates	-

Appendix-2.2 List of Boric acid, Specific sodium borates

Substances Name	CAS No.
Boric acid	10043-35-3 11113-50-1 12179-04-3
Sodium tetraborate pentahydrate	1330-43-4
Disodium tetraborate, anhydrous	1303-96-4
Sodium tetraborate decahydrate	12267-73-1
Tetraboron disodium heptaoxide, hydrate	

Appendix-3.1 List of Other Polycyclic aromatic hydrocarbons(PAHs)

Substances Name	CAS No.
Acenaphthene	83-32-9
Acenaphthylene	208-96-8
Naphthalene	91-20-3
Fluorene	86-73-7
Phenanthrene	85-01-8
Anthracene	120-12-7
Fluoranthene	206-44-0, 93951-69-0
Pyrene	129-00-0, 1718-52-1
Indeno[1,2,3-c,d]pyrene	193-39-5
Benzo[g,h,i]perylene	191-24-2
Benzo[r,s,t]pentaphene	189-55-9
Dibenzo[a,h]acridine	226-36-8
Dibenzo[a,i]acridine	224-42-0
Dibenzo[a,e]fluoranthene	5385-75-1
Dibenzo[a,e]pyrene	192-65-4
Dibenzo[a,h]pyrene	189-64-0
Dibenzo[a,i]pyrene	191-30-0
7H-Dibenzo(c,g)carbazole	194-59-2
5-Methylchrysene	3697-24-3

Appendix-3.2 chemSHERPA Declarable Substance Ver. (latest Version)

Substances Name	U R L
LR01: CSCL (Chemical Substances Control Law) : Class I specified chemical substance	http://www.meti.go.jp/policy/chemical_management/kasinhou/index.html
LR02 : Toxic Substances Control Act (TSCA) Section 6	https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/regulation-chemicals-under-section-6a-toxic-substances
LR03 : End-of Life Vehicles Directive (ELV) 2011/37/EU	http://ec.europa.eu/environment/waste/elv/index.htm
LR04 : EU RoHS Directive 2011/65/EU ANNEX II	http://ec.europa.eu/environment/waste/rohs_eee/index_en.htm
LR05 : EU P POPs Regulation (EC) No 850/2004 ANNEX I	http://ec.europa.eu/environment/chemicals/international_conventions/index_en.htm
LR06 : EU REACH Regulation (EC) No 1907/2006 Candidate List of SVHC for Authorisation and ANNEX XIV	http://ec.europa.eu/environment/chemicals/reach/reach_en.htm https://echa.europa.eu/web/guest/candidate-list-table
LR07 : EU REACH Regulation (EC) No 1907/2006 ANNEX XVII	http://echa.europa.eu/addressing-chemicals-of-concern/restrictions/substances-restricted-under-reach
IC01 : Global Automotive Declarable Substance List (GADSL)	http://www.gadsl.org/
IC02 : IEC 62474 DB Declarable substance groups and declarable substances	http://std.iec.ch/iec62474/iec62474.nsl/MainFrameset

Appendix-3.3 Volatile organic compounds (VOCs)

Substances Name	CAS No.
Propan-2-ol	67-63-0
Acetone	67-64-1
Butyl acetate	123-86-4
Xylene	1330-20-7
Ethyl methyl ketone	78-93-3
Ethanol	64-17-5
Ethylbenzene	100-41-4
Tetrahydrofuran	109-99-9
2-propanol, 1-methoxy-	107-98-2
1-butanol	71-36-3
Methyl isobutyl ketone	108-10-1
Heptane	142-82-5
Ethyl acetate	141-78-6
Cyclohexanone	108-94-1

Appendix-3.4 Rare earth metals

Substances Name	CAS No.
Sc (Scandium) and its compounds	-
Y (Yttrium) and its compounds	-
La (Lanthanum) and its compounds	-
Ce (Cerium) and its compounds	-
Pr (Praseodymium) and its compounds	-
Nd (Neodymium) and its compounds	-
Pm (Promethium) and its compounds	-
Sm (Samarium) and its compounds	-
Eu (Europium) and its compounds	-
Gd (Gadolinium) and its compounds	-
Tb (Terbium) and its compounds	-
Dy (Dysprosium) and its compounds	-
Ho (Holmium) and its compounds	-
Er (Erbium) and its compounds	-
Tm (Thulium) and its compounds	-
Yb (Ytterbium) and its compounds	-
Lu (Lutetium) and its compounds	-

NAMICS Green Procurement Standards Environmentally hazardous chemical substances list_Revision Records

Revision No.	Established/ Revised on	Revision	Reason for revision	Established/ Revised by	
13	2016/4/25	Revise the document name "NAMICS Green Procurement Standards Regulated and Managed Substances list" "NAMICS Green Procurement Standards Environmentally Hazardous Chemical Substances List"	In order to follow Definition of Terms in "NAMICS Green Procurement Standards Document".	QA Div.	
		To add new regulated level: "Reduced Substances"			
		Reallocate the Reference No.			To specify the requirements.
		To add the Appendix 1~3			
		Review the Regulated level and Scope. (No.P1020, P1030, P2001, M003)			To meet the customer requirements
		To Add the information of "Laws and regulations". (No.P1008)	To follow the legal amendment.		
14	2017/6/16	To add Managed substances (No. M017 ~ M020).	To meet the customer requirements	QA Div.	
		To review the scope of Regulated substances (No.P1023, P2003).			
		To review the threshold limit of Regulated substances (No. P1036).			
		Review the Regulated level and Scope. (No.P1036,R001,R014)			To specify the requirements.
		To add the Appendix 3.2			
15	2018/6/29	To add Managed substances (No. R015).	To meet the customer requirements	QA Div.	
		To review the threshold limit of Regulated substances (Reduced substances).			
16	2019/6/28	To add Level 2 substances (P2003)	To meet the customer requirements	QA Div.	
		To add Managed substances (M003,M021,M022)			
		Review the Laws and regulations			
		To review the Analyzed target			