

VERSACE

CHEMICAL SAFETY REQUIREMENTS:
RAW MATERIALS AND FINISHED PRODUCTS
VERSACE APPAREL & ACCESSORIES

Rev I _ 18/09/2018
RAW MATERIALS: Fabric, Leather, Metals, Plastic
FINISHED PRODUCTS: Bags, SLG, Shoes, RTW, Bijoux, Home

GIANNI VERSACE SRL

CHEMICAL SAFETY SPECIFICATIONS RSL

RAW MATERIALS AND FINISHED PRODUCTS

INTRODUCTION

Gianni Versace S.r.l. has adopted an ethical code of conduct that ensures chemical safety and has presented a Restricted Substances List (RSL) to be used throughout our supply chain. We have sent the below table to all our suppliers and expect them to comply and act responsibly when providing us with materials that include chemicals. This includes the procurement of raw materials, and the manufacturing of finished goods (apparel, accessories and shoes).

	FABRIC	LEATHER	METALS	PLASTIC and other POLYMERIC MATERIALS	PACKAGING
Ph	X	X			
Azodyes – Aromatic Amines	X	X			
Formaldehyde	X	X		X	
Chlorophenols	X	X			
Heavy Metals (Total content)	X	X	X	X (Only lead and cadmium)	X
Heavy Metals (Extractable)	X	X	X (Nickel – Release)	X	
Phthalates	X	X		X	
Organotins Compounds	X	X		X	
Dimethylfumarate	X	X			
Ortophenilphenol	X	X			
Alchilphenols / Alchilphenols Etoxylated	X	X			
Flame retardants	X	X			
PFC Ionic and Volatile	X	X			
Chlorinated paraffins	X	X		X	
Chlorinated benzenes and toluenes and other Chlorinated solvent	X	X		X	
Allergenic and Carcinogenic dyes	X	X			
Polycyclic Aromatic Hydrocarbons (PAHs)	X	X		X	
Other solvents	X	X		X	
Nitrosammines				X	
Vinyl chloride monomer				X	
Pesticides	X (only natural fibers)				
Colour fastness and Flammability	X				

FABRIC

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
1	pH (aqueous extract)				4÷7,5	ISO 3071 GB/T 7573
2	AZODYES - Restricted Aromatic Amines which can be released from Azo Dyes	4-Aminodiphenyl		92-67-1	≤ 20 mg/kg	ISO/DIS 14362-1 e -3 GB/T 17592.1 and GB/T 23344
		Benzidine		92-87-5		
		4-Chloro-o-Toluidine		95-69-2		
		2-Naphthylamine		91-59-8		
		o-Aminoazotoluene		97-56-3		
		2-Amino-4-nitrotoluene		99-55-8		
		p-Chloroaniline		106-47-8		
		2,4-Diaminoanisoole		615-05-4		
		4,4'- Diaminodiphenylmethane		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		838-88-0		
		p-Cresidine		120-71-8		
		4,4'-Methylene-bis (2-chloroaniline)		101-14-4		
		4,4'-Oxydianiline		101-80-4		
		4,4'-Thiodianiline		139-65-1		
		o-Toluidine		95-53-4		
		2,4-Toluenediamine		95-80-7		
		2,4,5-Trimethylaniline		137-17-7		
		o-Anisidine		90-04-0		
		4-Amino azobenzene		60-09-3		
		2,6- Xylidine		87-62-7		
		2,4- Xylidine		95-68-1		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
3	Formaldehyde	Formaldehyde		50-00-0	<75 mg/kg	ISO 14184-1 GB/T 2912.1
4	Chlorophenols	Pentachlorophenol	PCP	87-86-5	≤ 0,05 mg/kg	LFGB B 82.02.8
		2,3,4,6 Tetrachlorophenol	TeCP	58-90-2		
		2,3,4,5 Tetrachlorophenol		4901-51-3		
		2,3,5,6 Tetrachlorophenol		935-95-5		
		2,3,4 Trichlorophenol	TriCP	15950-66-0		
		2,4,6 Trichlorophenol		88-06-2		
		2,3,5 Trichlorophenol		933-78-8		
		2,3,6 Trichlorophenol		933-75-5		
		2,4,5 Trichlorophenol		95-95-4		
3,4,5 Trichlorophenol	609-19-8					
5	Heavy Metals Total content	Lead	Pb	7439-92-1	≤ 40 mg/kg	CPSC-CH-E1003-09.3 (surface coating) CPSC-CH-E1001-08.1 CPSC CH E1002-08.1 CPSC-CH-E1002-08.3 (substrate) EN 16711-1
		Cadmium	Cd	7440-43-9	≤ 10 mg/kg	
		Arsenic	As	7440-38-2	Not detectable ≤ 1 mg/kg	
		Mercury	Hg	7439-97-6	Not detectable ≤ 1 mg/kg	
6.	Heavy Metals Extractable	Cadmium	Cd	7440-38-2	≤ 0,1 mg/Kg	EN 16711-2
		Lead	Pb	7439-92-1	≤ 1 mg/Kg	
		Arsenic	As	7440-38-2	≤ 0,2 mg/Kg	
		Antimony	Sb	7440-36-0	≤ 30 mg/Kg	
		Chromium	Cr	7440-47-3	≤ 2 mg/Kg	
		Chromium VI	CrVI	18540-29-9	< 0,5 mg/Kg	Extraction with alkaline solution (ref. ISO 105 E04-UV determination)
		Cobalt	Co	7440-48-4	≤ 1 mg/Kg	EN 16711-2
		Copper	Cu	7440-50-8	≤ 50 mg/Kg	
		Mercury	Hg	7439-97-6	≤ 0,02 mg/Kg	
Nickel	Ni	7440-02-0	≤ 4 mg/Kg			

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
7	Phthalates	Benzyl Butyl phthalate	BBP	85-68-7	≤50 mg/kg	CPSC-CH-C1001-09.3
		Di (2-ethylhexyl) phthalate	DEHP	117-81-7		
		Diisobutylphthalate	DIBP	84-69-5		
		Di-n-butyl phthalate	DBP	84-74-2		
		Di-isononyl phthalate	DINP	28553-12-0		
		Di-n-octyl phthalate	DNOP	117-84-0	Sum ≤500 mg/kg	
		Di-n-hexyl phthalate	DnHP	84-75-3		
		Di-isodecylphthalate	DIDP	26761-40-0		
		1,2-Benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7-rich	DIHP	71888-89-6		
		1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	DHNUP	68515-42-4		
		Bis(2-methoxyethyl)phthalate	DMEP	117-82-8		
		Diisopentylphthalate	DIPP	605-50-5		
		N-pentylisopentylphthalate	nPIPP	776297-69-9		
		Di-n-pentyl phthalate	DnPP	131-18-0		
		1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	DPP	84777-06-0		
		Dimethyl phthalate	DMP	131-11-3		
		Diethylphthalate	DEP	84-66-2		
		Di-iso-octylphthalate	DIOP	27554-26-3		
		Di-nonylphthalate	DNP	84-76-4		
		Di-n-propylphthalate	DprP	131-16-8		
Di-cyclo-hexylphthalate	DCHP	84-61-7				
Di-hexylphthalate	DHXP	68515-50-4				
8	Organotins Compounds	Dibutyltin	DBT	1002-53-5	Not detectable (≤ 0.1 mg/kg)	ISO/TS 16179
		Diocetyl tin	DOT	15231-44-4		
		Tributyltin	TBT	56573-85-4		
		Triphenyltin	TPhT	668-34-8		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
9	Dimethylfumarate		DMFu	624-49-7	Usage is forbidden Not detectable (≤0,1 mg/kg)	ISO/TS 16186
10	Orthophenilphenol	2-phenylphenol	OPP	90-43-7	≤ 50 mg/kg	LFGB B 82.02.8
11	Alchilphenols Alchilphenols Etoxylyated	Nonylphenol	NP	25154-52-3	Sum ≤ 100 mg/kg	NP, OP: ISO 18857-1 NPEO, OPEO: ISO 18254
		Etoxylyated Nonylphenol	NPEO	9016-45-9 and various		
		Octylphenol	OP	1806-26-4		
		Etoxylyated Octylphenol	OPEO	9000-93-1 and various		
12	Flame Retardants	Penta-bromodiphenyl ether	pentaBDE	32534-81-9	Not detectable (≤5 mg/kg)	GB/T 24279 ISO 17881 (1 and 2)
		Octa-bromodiphenyl ether	octaBDE	32536-52-0		
		Decabromodiphenyl ether	DecaBDE	1163-19-5		
		Tris (1-aziridiny)-phosphine oxide	TEPA	545-55-1		
		Tris (2,3-dibromopropyl) phosphate	TRIS	126-72-7		
		Polybrominatedbiphenyls	PBB	59536-65-1		
		Tris(2-chloroethyl)phosphate	TCEP	115-96-8		
		Hexabromocyclododecane	HBCDD	3194-55-6		
		Bis(2,3-dibromopropyl ether) of tetrabromobisphenol		21850-44-2		
		Tris(1,3-dichloro-2-propyl) phosphate	TDCPP	13674-87-8		
		Tris(2-chloro-1-methylethyl) phosphate	TCPP	13674-87-5		
		2-Ethylhexyl-2,3,4,5-tetrabromobenzoate	TBB	183658-27-7		
		Bis(2-Ethylexyl)-3,4,5,6-tetrabromophthalate	TBPH	26040-51-7		
13	PFCs IONIC (PFOS, PFOA..)	Perfluorooctane sulfonates	PFOS	1763-23-1	≤1 µg/m ²	CEN/TS 15968
		Perfluorooctanic acid	PFOA	335-67-1	≤1 µg/m ²	

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Other ionic PFCs: Perfluorobutane sulfonate (PFBS), perfluorohexane sulfonate (PFHxS), perfluoroheptane sulfonate (PFHpS), perfluorooctane sulfonate (PFOS), perfluorodecane sulfonate (PFDS), perfluorobutanoate (PFBA), perfluoropentanoate (PFPA), perfluorohexanoate (PFHxA), perfluoroheptanoate (PFHpA), perfluorooctanoate (PFOA), perfluorononanoate (PFNA), perfluorodecanoate (PFDA), perfluoroundecanoate (PFUnA), perfluorododecanoate (PFDoA), perfluorotridecanoate (PFTTrA), perfluorotetradecanoate (PFTeA), perfluorooctane sulfonamide (PFOSA), perfluoro-3,7-dimethyloctanoate (PF-3,7-DMOA), 7H-dodecafluoroheptanoate (HPFHpA), 2H,2H-perfluorodecanoate (H2PFDA), 2H,2H,3H,3H-perfluoroundecanoate (H4PFUnA)		Various	≤ 1 µg/m ²	CEN/TS 15968 or Solvent extraction, LC-MS analysis
14	PFCs VOLATILE	1H,1H,2H,2H-perfluorooctylacrylate (6:2 FTA), 1H,1H,2H,2H-perfluorodecylacrylate (8:2 FTA), 1H,1H,2H,2H-perfluorododecylacrylate (10:2 FTA), 1H,1H,2H,2H-perfluoro-1-hexanol (4:2 FTOH), 1H,1H,2H,2H-perfluoro-1-oktanol (6:2 FTOH), 1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH), 1H,1H,2H,2H-perfluoro-1-dodecanol (10:2 FTOH), 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE), 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE), N-methylperfluoro-1-octanesulfonamide (MeFOSA), N-ethylperfluoro-1-octanesulfonamide (EtFOSA)		Various	≤ 1 µg/m ² ≤ 10 µg/m ² For 8:2 FTOH 10:2 FTOH 4:2 FTOH 6:2 FTOH	
15	Chlorinated paraffins (C10-C13)	SCCPs: C10-C13	SCCP	85535-84-8	Not detectable (≤ 50 mg/kg)	Extraction in solvent GC-MS / LC-MS-MS

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
16	Chlorinated benzenes and toluenes and other Chlorinated solvent	Chlorinated benzenes and toluenes Monochlorobenzene, Chlorobenzene 1,2- Dichlorobenzene 1,3- Dichlorobenzene 1,4- Dichlorobenzenes 1,2,3- Trichlorobenzene 1,2,4- Trichlorobenzene 1,3,5- Trichlorobenzene 1,2,3,4- Tetrachlorobenzene 1,2,3,5- Tetrachlorobenzene 1,2,4,5 Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene 2- Chlorotoluene, 3- Chlorotoluene 4- Chlorotoluene 2,3- Dichlorotoluenes 2,4- Dichlorotoluene 2,5- Dichlorotoluene 2,6- Dichlorotoluene 3,4- Dichlorotoluene 2,3,6- Trichlorotoluene 2,4,5- Trichlorotoluene Pentachlorotoluene Tetrachlorotoluene		108-90-7; 541-73-1; 106-46-7; 95-50-1;87- 61-6; 120-82-1; 108-70-3; 634-66-2; 634-90-2; 95-94-3; 608-93-5 118-74-1; 95-49-8; 108-41-8; 106-43-4 95-73-8; 19398-61-9; 118-69-4; 32768-54-0; 95-75-0; 2077-46-5; 98-07-7; 2136-89-2; 5216-25-1; 81-19-6; 877-11-2	Sum ≤1 mg/kg	DIN 54232
		Other Chlorinated Solvents, Pentacloroethane, Carbon Tetrachloride, 1,1,1- Trichloroethane, 1,1,1,2- Tetrachloroethane, 1,1,2,2- Tetrachloroethane, Chloroform, 1,1,2- Trichloroethane, 1,1-Dicloroetilene, Tricloroetilene, Tetrachloromethane		76-01-7; 71-55-6; 630 -20-6; 79-34-5; 67-66-3; 79-00-5; 75- 35-4; 79-01-6; 56-23-5	Sum ≤500 mg/kg	Extraction with solvent/ GC-MS
17	Allergenic dyes	C.I. Disperse Blue 1		2475-45-8	≤50 mg/kg	DIN 54231
		C.I. Disperse Blue 3		2475-46-9		
		C.I. Disperse Blue 7		3179-90-6		
		C.I. Disperse Blue 26		3860-63-7		
		C.I. Disperse Blue 35		12222-75-2		
		C.I. Disperse Blue 102		12222-97-8		
		C.I. Disperse Blue 106		12223-01-7		
		C.I. Disperse Blue 124		61951-51-7		
		C.I. Disperse Brown 1		23355-64-8		
		C.I. Disperse Orange 1		2581-69-3		
		C.I. Disperse Orange 3		730-40-5		
		C.I. Disperse Orange 37/59		12223-33-5		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		C.I. Disperse Orange 76		13301-61-6		
		C.I. Disperse Red I		2872-52-8		
		C.I. Disperse Red II		2872-48-2		
		C.I. Disperse Red 17		3179-89-3		
		C.I. Disperse Yellow I		119-15-3		
		C.I. Disperse Yellow 3		2832-40-8		
		C.I. Disperse Yellow 9		6373-73-5		
		C.I. Disperse Yellow 39		12236-29-2		
		C.I. Disperse Yellow 49		54824-37-2		
		C.I. Disperse Yellow 23		6250-23-3		
18	Carcinogenic Dyes	Disperse Blue I		2475-45-8	Not detectable (≤5 mg/kg)	DIN 54231
		Disperse Orange II		82-28-0		
		Disperse Yellow 3		2832-40-8		
		Basic Red 9		569-61-9		
		Basic Violet 14		632-99-5		
		Acid Red 26		3761-53-3		
		Direct Black 38		1937-37-7		
		Direct Red 28		573-58-0		
		Direct Blue 6		2602-46-2		
		Disperse Orange 149		151126-94-2, 85136-74-9		
		Basic Blue 26		2580-56-5		
		Basic Violet 3		548-62-9		
19	Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)pyrene	BaP	50-32-8	Each ≤1 mg/kg (except for naphthalene ≤2 mg/kg)	AFPS GS 2014:01 PAK
		Benzo(a)anthracene	BaA	56-55-3		
		Benzo(b)fluoranthene	BbF	205-99-2		
		Benzo(e)pyrene	BeP	192-97-2		
		Benzo(j)fluoranthene	BjF	205-82-3	Sum ≤10 mg/kg	

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Benzo(k)fluoranthene	BkF	207-08-9		
		Chrysene	CHR	218-01-9		
		Dibenzo(a, h)anthracene	DBA	53-70-3		
		Benzo(g,h,i)perylene		191-24-2		
		Indeno(1,2,3-cd)pyrene		193-39-5		
		Acenaphtene		83-32-9		
		Acenaphtylene		208-96-8		
		Anthracene		120-12-7		
		Fluoranthene		206-44-0		
		Fluorene		86-73-7		
		Phenanthrene		85-01-8		
		Pyrene		129-00-0		
		Naphtalene		91-20-3		
20	Other Solvents	N,N-Dimethylacetamide	DMAC	127-19-5	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC
		N,N-Dimethylformamide	DMF	68-12-2	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC ISO TS 16189
		1-Methyl-2-Pyrrolidone	NMP	872-50-4	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC
21	Pesticides	Aldrin		309-00-2	≤0,2 mg/kg	EPA 8081
		2-(2,4,5-Trichlorophenoxy)propionic acid, its salts and compounds		93-72-1	Sum	EPA 8151
		Azinphos-methyl		86-50-0	≤1 mg/kg	EPA 8141
		Azinphos-ethyl		2642-71-9		
		Bromophos-ethyl		4824-78-6		
		Captafol		01/06/2425		
		Carbaryl		63-25-2		
		Chlordane		57-74-9		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Chlordecone		143-50-0		
		Chlordimeform		6164-98-3		
		Chlorfenvinphos		470-90-6		
		Coumafos		56-72-4		
		Cyfluthrin		68359-37-5		
		Lambda cyhalothrin		91465-08-6		
		Cypermethrin		52315-07-8		
		DEF		78-48-8		
		Deltamethrin		52918-63-5		
		Diaryl halogenated alkanes		various		
		Dicrotophos		141-66-2		
		Diazinon		333-41-5		
		Halogenated biphenyls, including Polychlorinated biphenyls (PCBs)		1336-36-3; 53469-21-9; Various		
		1-(o-Chlorophenyl)-1-(p-chlorophenyl)-2,2-dichloroethane (o,p'-DDD)		53-19-0		
		1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane (p,p'-DDD)		72-54-8		
		2-(2-Chlorophenyl)-2-(4-chlorophenyl)-1,1-dichloroethene (o,p'-DDE)		3424-82-6		
		1,1-Bis(p-chlorophenyl)-2,2-dichloroethylene (p,p'-DDE)		72-55-9		
		2,4'-Dichlorodiphenyltrichloroethane (o,p'-DDT) and its isomers; preparations containing DDT and its isomers		789-02-6		
		p,p'-Dichlorodiphenyldichloroethane (p,p'-DDT) and its isomers; preparations containing DDT and its isomers		50-29-3		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		2,4-Dichlorophenoxyacetic acido, its salts and compounds		94-75-7		
		Dichlorprop		120-36-5		
		Dieldrin		60-57-1		
		Dimethoate		60-51-5		
		Dinoseb and salt		88-85-7		
		Endosulfan		115-29-7		
		Endosulfan, alfa		959-98-8		
		Endosulfan, beta		33213-65-9		
		Endrin		72-20-8		
		Hexabromobiphenyl		36355-01-8		
		Hexachlorocyclohexane		608-73-1		
		Esfenvalerate		66230-04-4		
		Fenvalerate		51630-58-1		
		Heptachlor		76-44-8		
		Heptachlorepoxyde		1024-57-3		
		Isodrin		465-73-6		
		Kevelan		4234-79-1		
		Lindane (gamma-HCH)		58-89-9		
		Malathion		121-75-5		
		MCPA (4-Chloro-2-methylphenoxyacetic acid)		94-74-6		
		MCPB (4-(4-Chloro-o-tolyloxy)butyric acid		94-81-5		
		Mecoprop		93-65-2		
		Halogenated diphenyl methanes		various		
		Methamidophos		10265-92-6		
		Methoxychlor		72-43-5		
		Metilparathion		298-00-0		
		Mevinphos (Fosdrin)		7786-34-7		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Mirex		2385-85-5		
		Monocrotophos		6923-22-4		
		Monomethyl-dibromo-diphenyl methane (DBBT)		99688-47-8		
		Monomethyl-dichloro-diphenyl methane		81161-70-8		
		Monomethyl-tetrachlorodiphenyl methane		76253-60-6		
		Halogenated naphthalenes		various		
		Parathion		56-38-2		
		Perthan		72-56-0		
		Profenofos		41198-08-7		
		Propetamphos		31218-83-4		
		Quinalphos		13593-03-8		
		Quintozene		82-68-8		
		Strobane		8001-50-1		
		Telodrin		297-78-9		
		Alogenated phenols, including polychlorinated triphenyls (PCT)		various		
		Toxafene		8001-35-2		
		2,4,5-Trichlorophenoxyacetic acid (2,4,5-T), its salts and compounds		93-76-5		
		Triflularin		1582-09-8		
		α- Hexachlorocyclohexane		319-84-6		
		β- Hexachlorocyclohexane		319-85-7		
		δ- Hexachlorocyclohexane		319-86-8		

LEATHER

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
1	pH (aqueous extract)				3,5÷7,5 Leather with organic tanning:eg. (vegetable) pH: 3,2÷7,5 ΔpH ≤ 0,7	ISO 4045
2	AZODYES - Restricted Aromatic Amines which can be released from Azo Dyes	4-Aminodiphenyl		92-67-1	≤ 30 mg/kg	ISO 17234-1 and 2 GB/T 19942
		Benzidine		92-87-5		
		4-Chloro-o-Toluidine		95-69-2		
		2-Naphthylamine		91-59-8		
		o-Aminoazotoluene		97-56-3		
		2-Amino-4-nitrotoluene		99-55-8		
		p-Chloroaniline		106-47-8		
		2,4-Diaminoanisole		615-05-4		
		4,4'- Diaminodiphenylmethane		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		838-88-0		
		p-Cresidine		120-71-8		
		4,4'-Methylene-bis (2-chloroaniline)		101-14-4		
		4,4'-Oxydianiline		101-80-4		
		4,4'-Thiodianiline		139-65-1		
		o-Toluidine		95-53-4		
		2,4-Toluediamine		95-80-7		
		2,4,5-Trimethylaniline		137-17-7		
		o-Anisidine		90-04-0		
		4-Amino azobenzene		60-09-3		
		2,6- Xylidine		87-62-7		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD	
		2,4- Xylidine		95-68-1			
3	Formaldehyde	Formaldehyde		50-00-0	<75 mg/kg	ISO 17226-1 GB/T 19941	
4	Chlorophenols	Pentachlorophenol	PCP	87-86-5	≤ 0,5 mg/kg	EN-ISO 17070	
		2,3,4,6 Tetrachlorophenol	TeCP	58-90-2			
		2,3,4,5 Tetrachlorophenol		4901-51-3			
		2,3,5,6 Tetrachlorophenol		935-95-5			
		2,3,4 Trichlorophenol	TriCP	15950-66-0			
		2,4,6 Trichlorophenol		88-06-2			
		2,3,5 Trichlorophenol		933-78-8			
		2,3,6 Trichlorophenol		933-75-5			
		2,4,5 Trichlorophenol		95-95-4			
		3,4,5 Trichlorophenol		609-19-8			
5	Heavy metals Total contents	Lead		Pb	7439-92-1	≤ 40 mg/kg	EN ISO 17072-2
		Cadmium		Cd	7440-43-9	≤ 10 mg/kg	
		Arsenic	As	7440-38-2	Not detectable ≤ 1 mg/kg		
		Mercury	Hg	7439-97-6	Not detectable ≤ 1 mg/kg		
6	Heavy metals Extractable	Cadmium	Cd	7440-38-2	≤ 0,1 mg/Kg	ISO 17072-1	
		Lead	Pb	7439-92-1	≤ 0,8 mg/Kg		
		Arsenic	As	7440-38-2	≤ 0,2 mg/Kg		
		Antimony	Sb	7440-36-0	≤ 30 mg/Kg		
		Chromium	Cr	7440-47-3	≤ 2 mg/Kg		
		Chromium VI	CrVI	18540-29-9	< 3 mg/Kg	ISO 17075-2	
			Cobalt	Co	7440-48-4	≤ 1 mg/Kg	ISO 17072-1
			Copper	Cu	7440-50-8	≤ 50 mg/Kg	
			Mercury	Hg	7439-97-6	≤ 0,05 mg/Kg	
			Nickel	Ni	7440-02-0	≤ 4 mg/Kg	

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
7	Phtalates	Benzyl Butyl phthalate	BBP	85-68-7	≤50 mg/kg	CPSC-CH-C1001-09.3
		Di (2-ethylhexyl) phthalate	DEHP	117-81-7		
		Diisobutylphthalate	DIBP	84-69-5		
		Di-n-butyl phthalate	DBP	84-74-2		
		Di-isononyl phthalate	DINP	28553-12-0		
		Di-n-octyl phthalate	DNOP	117-84-0	Sum ≤500 mg/kg	
		Di-n-hexyl phthalate	DnHP	84-75-3		
		Di-isodecylphthalate	DIDP	26761-40-0		
		1,2-Benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7-rich	DIHP	71888-89-6		
		1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	DHNUP	68515-42-4		
		Bis(2-methoxyethyl)phthalate	DMEP	117-82-8		
		Diisopentylphthalate	DIPP	605-50-5		
		N-pentylisopentylphthalate	nPIPP	776297-69-9		
		Di-n-pentyl phthalate	DnPP	131-18-0		
		1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	DPP	84777-06-0		
		Dimethyl phthalate	DMP	131-11-3		
		Diethylphthalate	DEP	84-66-2		
		Di-iso-octylphthalate	DIOP	27554-26-3		
		Di-nonylphthalate	DNP	84-76-4		
		Di-n-propylphthalate	DprP	131-16-8		
Di-cyclo-hexylphthalate	DCHP	84-61-7				
Di-hexylphthalate	DHXP	68515-50-4				
8	Organotins Compounds	Dibutyltin	DBT	1002-53-5	Not detectable (≤ 0.1 mg/kg)	ISO/TS 16179
		Diocetyl tin	DOT	15231-44-4		
		Tributyltin	TBT	56573-85-4		
		Triphenyltin	TPhT	668-34-8		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
9	Dimethylfumarate		DMFu	624-49-7	Usage is forbidden Not detectable (≤0,1 mg/kg)	ISO/TS 16186
10	Ortophenilphenol	2-phenylphenol	OPP	90-43-7	≤ 50 mg/kg	LFGB B 82.02.8
11	Alchilphenols Alchilphenols Etoxyated	Nonylphenol	NP	25154-52-3	Sum ≤ 100 mg/kg	NP, OP: ISO 18857-1 or ISO DIS 18218-2 NPEO, OPEO: ISO DIS 18218-1
		Etoxyated Nonylphenol	NPEO	9016-45-9 and various		
		Octylphenol	OP	1806-26-4		
		Etoxyated Octylphenol	OPEO	9000-93-1 and various		
12	Flame retardants	Penta-bromodiphenyl ether	pentaBDE	32534-81-9	Not detectable (≤5 mg/kg)	GB/T 24279 ISO 17881 (1 and 2)
		Octa-bromodiphenyl ether	octaBDE	32536-52-0		
		Decabromodiphenyl ether	DecaBDE	1163-19-5		
		Tris (1-aziridiny)-phosphine oxide	TEPA	545-55-1		
		Tris (2,3-dibromopropyl) phosphate	TRIS	126-72-7		
		Polybrominatedbiphenyls	PBB	59536-65-1		
		Tris(2-chloroethyl)phosphate	TCEP	115-96-8		
		Hexabromocyclododecane	HBCDD	3194-55-6		
		Bis(2,3-dibromopropyl ether) of tetrabromobisphenol		21850-44-2		
		Tris(1,3-dichloro-2-propyl) phosphate	TDCPP	13674-87-8		
		Tris(2-chloro-1-methylethyl) phosphate	TCPP	13674-87-5		
		2-Ethylhexyl-2,3,4,5-tetrabromobenzoate	TBB	183658-27-7		
		Bis(2-Ethylhexyl)-3,4,5,6-tetrabromophthalate	TBPH	26040-51-7		
13	PFCs IONIC (PFOS, PFOA..)	Perfluorooctane sulfonates	PFOS	1763-23-1	≤1 µg/m ²	CEN/TS 15968
		Perfluorooctanic acid	PFOA	335-67-1	≤1 µg/m ²	

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Altri PFCs ionici: Perfluorobutane sulfonate (PFBS), perfluorohexane sulfonate (PFHxS), perfluoroheptane sulfonate (PFHpS), perfluorooctane sulfonate (PFOS), perfluorodecane sulfonate (PFDS), perfluorobutanoate (PFBA), perfluoropentanoate (PFPA), perfluorohexanoate (PFHxA), perfluoroheptanoate (PFHpA), perfluorooctanoate (PFOA), perfluorononanoate (PFNA), perfluorodecanoate (PFDA), perfluoroundecanoate (PFUnA), perfluorododecanoate (PFDoA), perfluorotridecanoate (PFTTrA), perfluorotetradecanoate (PFTeA), perfluorooctane sulfonamide (PFOSA), perfluoro-3,7-dimethyloctanoate (PF-3,7-DMOA), 7H-dodecafluoroheptanoate (HPFHpA), 2H,2H-perfluorodecanoate (H2PFDA), 2H,2H,3H,3H-perfluoroundecanoate (H4PFUnA)		Various	≤ 1 µg/m ²	CEN/TS 15968 or Solvent extraction, LC-MS analysis
14	PFCs VOLATILE	1H,1H,2H,2H-perfluorooctylacrylate (6:2 FTA), 1H,1H,2H,2H-perfluorodecylacrylate (8:2 FTA), 1H,1H,2H,2H-perfluorododecylacrylate (10:2 FTA), 1H,1H,2H,2H-perfluoro-1-hexanol (4:2 FTOH), 1H,1H,2H,2H-perfluoro-1-oktanol (6:2 FTOH), 1H,1H,2H,2H-perfluoro-1-decanol (8:2 FTOH), 1H,1H,2H,2H-perfluoro-1-dodecanol (10:2 FTOH), 2-(N-methylperfluoro-1-octanesulfonamido)-ethanol (MeFOSE), 2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol (EtFOSE), N-methylperfluoro-1-octanesulfonamide (MeFOSA), N-ethylperfluoro-1-octanesulfonamide (EtFOSA)		Various	≤ 1 µg/m ² ≤ 10 µg/m ² For 8:2 FTOH 10:2 FTOH 4:2 FTOH 6:2 FTOH	
15	Chlorinated paraffins (C10-C13)	SCCPs: C10-C13	SCCP	85535-84-8	Not detectable (≤ 50 mg/kg)	Extraction in solvent GC-MS / LC-MS-MS

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
16	Chlorinated benzenes and toluenes and other Chlorinated solvents	Chlorinated benzenes and toluenes Monochlorobenzene, Chlorobenzene 1,2-Dichlorobenzene 1,3- Dichlorobenzene 1,4-Dichlorobenzenes 1,2,3- Trichlorobenzene 1,2,4-Trichlorobenzene 1,3,5- Trichlorobenzene 1,2,3,4-Tetrachlorobenzene 1,2,3,5- Tetrachlorobenzene 1,2,4,5 Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene 2- Chlorotoluene, 3-Chlorotoluene 4- Chlorotoluene 2,3-Dichlorotoluenes 2,4- Dichlorotoluene 2,5-Dichlorotoluene 2,6- Dichlorotoluene 3,4-Dichlorotoluene 2,3,6- Trichlorotoluene 2,4,5-Trichlorotoluene Pentachlorotoluene Tetrachlorotoluene		108-90-7; 541-73-1; 106-46-7; 95-50-1;87-61-6; 120-82-1; 108-70-3; 634-66-2; 634-90-2; 95-94-3; 608-93-5 118-74-1; 95-49-8; 108-41-8; 106-43-4 95-73-8; 19398-61-9; 118-69-4; 32768-54-0; 95-75-0; 2077-46-5; 98-07-7; 2136-89-2; 5216-25-1; 81-19-6; 877-11-2	Sum ≤1 mg/kg	DIN 54232
		Other Chlorinated Solvents Pentacloroethane, Carbon Tetrachloride, 1,1,1-Trichloroethane, 1,1,1,2- Tetrachloroethane, 1,1,2,2- Tetrachloroethane, Chloroform, 1,1,2-Trichloroethane, 1,1-Dicloroetilene, Tricloroetilene, Tetrachloromethane		76-01-7; 71-55-6; 630 -20-6; 79-34-5; 67-66-3 79-00-5; 75-35-4; 79-01-6; 56-23-5	Sum ≤500 mg/kg	Extraction in solvent/ GC-MS
17	Allergenic dyes	C.I. Disperse Blue 1		2475-45-8	≤50 mg/kg	DIN 54231
		C.I. Disperse Blue 3		2475-46-9		
		C.I. Disperse Blue 7		3179-90-6		
		C.I. Disperse Blue 26		3860-63-7		
		C.I. Disperse Blue 35		12222-75-2		
		C.I. Disperse Blue 102		12222-97-8		
		C.I. Disperse Blue 106		12223-01-7		
		C.I. Disperse Blue 124		61951-51-7		
		C.I. Disperse Brown 1		23355-64-8		
		C.I. Disperse Orange 1		2581-69-3		
		C.I. Disperse Orange 3		730-40-5		
		C.I. Disperse Orange 37/59		12223-33-5		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		C.I. Disperse Orange 76		13301-61-6		
		C.I. Disperse Red 1		2872-52-8		
		C.I. Disperse Red 11		2872-48-2		
		C.I. Disperse Red 17		3179-89-3		
		C.I. Disperse Yellow 1		119-15-3		
		C.I. Disperse Yellow 3		2832-40-8		
		C.I. Disperse Yellow 9		6373-73-5		
		C.I. Disperse Yellow 39		12236-29-2		
		C.I. Disperse Yellow 49		54824-37-2		
		C.I. Disperse Yellow 23		6250-23-3		
18	Carcinogenic Dyes	Disperse Blue 1		2475-45-8	Not detectable (≤5 mg/kg)	DIN 54231
		Disperse Orange 11		82-28-0		
		Disperse Yellow 3		2832-40-8		
		Basic Red 9		569-61-9		
		Basic Violet 14		632-99-5		
		Acid Red 26		3761-53-3		
		Direct Black 38		1937-37-7		
		Direct Red 28		573-58-0		
		Direct Blue 6		2602-46-2		
		Disperse Orange 149		151126-94-2, 85136-74-9		
		Basic Blue 26		2580-56-5		
		Basic Violet 3		548-62-9		
19	Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)pyrene	BaP	50-32-8	Each ≤1 mg/kg (except for naphthalene ≤2 mg/kg)	AFPS GS 2014:01 PAK
		Benzo(a)anthracene	BaA	56-55-3		
		Benzo(b)fluoranthene	BbF	205-99-2		
		Benzo(e)pyrene	BeP	192-97-2		
		Benzo(j)fluoranthene	BjF	205-82-3	Sum ≤10 mg/kg	

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Benzo(k)fluoranthene	BkF	207-08-9		
		Chrysene	CHR	218-01-9		
		Dibenzo(a, h)anthracene	DBA	53-70-3		
		Benzo(g,h,i)perylene		191-24-2		
		Indeno(1,2,3-cd)pyrene		193-39-5		
		Acenaphtene		83-32-9		
		Acenaphtylene		208-96-8		
		Anthracene		120-12-7		
		Fluoranthene		206-44-0		
		Fluorene		86-73-7		
		Phenanthrene		85-01-8		
		Pyrene		129-00-0		
		Naphtalene		91-20-3		
20	Other solvents	N,N-Dimethylacetamide	DMAC	127-19-5	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC
		N,N-Dimethylformamide	DMF	68-12-2	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC ISO TS 16189
		1-Methyl-2-Pyrrolidone	NMP	872-50-4	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC

METALS

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
1	Heavy metals Total content	Lead	Pb	7439-92-1	≤ 100 mg/kg ≤ 90 mg/kg (coating)	CPSC-CH-E1001-08.1 EN 16711-1
		Cadmium	Cd	7440-43-9	≤ 100 mg/kg (coating included)	
		Arsenic	As	7440-38-2	Not detectable ≤ 1 mg/kg	
		Mercury	Hg	7439-97-6	Not detectable ≤ 1 mg/kg	
2	Nickel (release)		Ni	7440-02-0	<0,5 µg/cm ² /week (contact with skin) <0,2 µg/cm ² /settimana (piercings)	EN 12472 + EN 1811

PLASTIC AND OTHER POLYMERIC MATERIALS*

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
1	N-Nitrosamines	N-Nitrosodibutylamine	NDBA	924-16-3	≤ 0,5 mg/kg	GB/T 24153
		N-Nitrosodiethylamine	NDEA	55-18-5		
		N-Nitrosodimethylamine	NDMA	62-75-9		
		N-Nitrosodipropylamine	NDPA	621-64-7		
		N-nitroso-N-ethylaniline	NEPhA	614-64-6		
		N-Nitroso-N-methylaniline		614-00-6		
		N-Nitrosomorpholine	NMOR	59-89-2		
		N-Nitrosopiperidine	NPIP	100-75-4		
		N-Nitrosopyrrolidine		930-55-2		
2	Vinyl chloride monomer	Vinyl chloride monomer	VCM	75-01-4	<5 mg/kg	GB/T 4615
3	Formaldehyde	Formaldehyde		50-00-0	<75 mg/kg	ISO 14184-1 GB/T 2912.1
4	Heavy metals Total content	Lead	Pb	7439-92-1	≤ 40 mg/kg	CPSC-CH-E1002-08.3
		Cadmium	Cd	7440-43-9	≤ 10 mg/kg	
5	Phtalates	Benzyl Butyl phthalate	BBP	85-68-7	≤50 mg/kg	CPSC-CH-C1001-09.3
		Di (2-ethylhexyl) phthalate	DEHP	117-81-7		
		Diisobutylphthalate	DIBP	84-69-5		
		Di-n-butyl phthalate	DBP	84-74-2		
		Di-isononyl phthalate	DINP	28553-12-0		
		Di-n-octyl phthalate	DNOP	117-84-0		
		Di-n-hexyl phthalate	DnHP	84-75-3		
		Di-isodecylphthalate	DIDP	26761-40-0		
		1,2-Benzenedicarboxylic acid, di-C6-8-branched alkylesters, C7-rich	DIHP	71888-89-6		
		1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	DHNUP	68515-42-4		
		Bis(2-methoxyethyl)phthalate	DMEP	117-82-8		

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Diisopentylphthalate	DIPP	605-50-5		
		N-pentylisopentylphthalate	nPIPP	776297-69-9		
		Di-n-pentyl phthalate	DnPP	131-18-0		
		1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	DPP	84777-06-0		
		Dimethyl phthalate	DMP	131-11-3		
		Diethylphthalate	DEP	84-66-2		
		Di-iso-octylphthalate	DIOP	27554-26-3		
		Di-nonylphthalate	DNP	84-76-4		
		Di-n-propylphthalate	DprP	131-16-8		
		Di-cyclo-hexylphthalate	DCHP	84-61-7		
		Di-hexylphthalate	DHXP	68515-50-4		
6	Organotins Compounds	Dibutyltin	DBT	1002-53-5	Not detectable (≤ 0.1 mg/kg)	ISO/TS 16179
		Dioctyltin	DOT	15231-44-4		
		Tributyltin	TBT	56573-85-4		
		Triphenyltin	TPhT	668-34-8		
7	Chlorinated paraffins (C10-C13)	SCCPs: C10-C13	SCCP	85535-84-8	Not detectable (≤50 mg/kg)	Extraction in solvent GC-MS / LC-MS-MS
8	Chlorinated benzenes and toluenes and other Chlorinated solvents	Chlorinated benzenes and toluenes Monochlorobenzene, Chlorobenzene 1,2- Dichlorobenzene 1,3- Dichlorobenzene 1,4- Dichlorobenzenes 1,2,3- Trichlorobenzene 1,2,4- Trichlorobenzene 1,3,5- Trichlorobenzene 1,2,3,4- Tetrachlorobenzene 1,2,3,5- Tetrachlorobenzene 1,2,4,5 Tetrachlorobenzene Pentachlorobenzene Hexachlorobenzene 2- Chlorotoluene, 3- Chlorotoluene 4- Chlorotoluene 2,3- Dichlorotoluenes 2,4- Dichlorotoluene 2,5- Dichlorotoluene 2,6- Dichlorotoluene 3,4- Dichlorotoluene 2,3,6- Trichlorotoluene 2,4,5- Trichlorotoluene Pentachlorotoluene Tetrachlorotoluene		108-90-7; 541-73-1; 106-46-7; 95-50-1; 87-61-6; 120-82-1; 108-70-3; 634-66-2; 634-90-2; 95-94-3; 608-93-5 118-74-1; 95-49-8; 108-41-8; 106-43-4 95-73-8; 19398-61-9; 118-69-4; 32768-54-0; 95-75-0; 2077-46-5; 98-07-7; 2136-89-2; 5216-25-1; 81-19-6; 877-11-2	Sum ≤1 mg/kg	DIN 54232

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		Other Chlorinated Solvents Pentacloroethane, Carbon Tetrachloride, 1,1,1-Trichloroethane, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Chloroform, 1,1,2-Trichloroethane, 1,1-Dicloroetilene, Tricloroetilene, Tetrachloromethane		76-01-7; 71-55-6; 630 -20-6; 79-34-5; 67-66-3 79-00-5; 75-35-4; 79-01-6; 56-23-5	Sum ≤500 mg/kg	Extraction in solvent/ GC-MS
9	Heavy metals	Lead	Pb	7439-92-1	90 mg/kg	GB 21550
	Extractable	Cadmium	Cd	7440-43-9	75 mg/kg	GB 21550
10	Polycyclic Aromatic Hydrocarbons (PAHs)	Benzo(a)pyrene	BaP	50-32-8	Each ≤1 mg/kg (except for naphtalene ≤2 mg/kg) Sum ≤10 mg/kg	AFPS GS 2014:01 PAK
		Benzo(a)anthracene	BaA	56-55-3		
		Benzo(b)fluoranthene	BbF	205-99-2		
		Benzo(e)pyrene	BeP	192-97-2		
		Benzo(j)fluoranthene	BjF	205-82-3		
		Benzo(k)fluoranthene	BkF	207-08-9		
		Chrysene	CHR	218-01-9		
		Dibenzo(a, h)anthracene	DBA	53-70-3		
		Benzo(g,h,i)perylene		191-24-2		
		Indeno(1,2,3-cd)pyrene		193-39-5		
		Acenaphtene		83-32-9		
		Acenaphtylene		208-96-8		
		Anthracene		120-12-7		
		Fluoranthene		206-44-0		
		Fluorene		86-73-7		
		Phenanthene		85-01-8		
		Pyrene		129-00-0		
		Naphtalene		91-20-3		
11	Other solvents	N,N-Dimethylacetamide	DMAC	127-19-5	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
		N,N-Dimethylformamide	DMF	68-12-2	Not detectable (≤0,1 mg/kg)	Extraction in solvent GC-MS; HS-GC ISO TS 16189

* Applicable to products or components of articles in plastic, rubber, PVC (eg. accessories, soles, heels, applications) and synthetic leather

PACKAGING

N.	REQUIREMENT	SUBSTANCE	ABBREVIATION	CAS N°	LIMIT	TEST METHOD
1	Heavy Metal Total Content	Lead + Cadmium + Mercury + Chrome VI		7440-38-2 ; 7439-92-1; 7439-97-6; 7440-47-3	Sum ≤100 mg/kg	Total Digestion

COLOUR FASTNESS AND FLAMMABILITY - FABRICS

N.	REQUIREMENT	SPECIFIC REQUIREMENT	LIMIT	TEST METHOD	NOTES
1	Colour fastness	To water	4	GB/T 5713-2013	
		To perspiration (acid & alkaline)	4	GB/T 3922-2013	
		To dry rubbing	4	GB/T 3920-2008	
2	Flammability		Classe 1 (both plain surface and raised fiber surfaces fabrics) or Classe 2 (raised fiber surfaces fabrics)	16 CFR 1610	Specific exemption: All plain surface fabrics, regardless of fiber content, that weigh 88 g/m2 or more All fabrics, both plain surface and raised fiber surfaces, regardless of weight, made entirely or from a combination of these fibers: acrylic, nylon, modacrylic, olefin, polyester, wool