Avery Dennison Apparel Solutions

Restricted Substances List (ADRSL) V11

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1. Letter to Suppliers

Dear Suppliers,

In an effort to further our commitment to sustainable manufacturing practices and consistent product safety, Avery Dennison Apparel Solutions Division has updated the Restricted Substances List (ADRSL) to V11, effective 1st July, 2023. ADRSL is developed based on legal requirements, RSL from the American Apparel and Footwear Association's, AFIRM, and on requirements from our major retail and brand customers.

It is our intent that this RSL will serve as a tool to assist our suppliers in ensuring they avoid the use and control the use by suppliers further up the chain of materials that may represent a hazards to the health of users of semi-finished or finished product or to the environment, that may influence end-of-life properties, or that may cause other concerns.

In this RSL there are separate acceptable concentration limits under product restricted substances list (PRSL) and manufacturing restricted substances list (MRSL).

- **PRSL:** applies to *direct* chemicals, components, semi-finished/ finished products, and packaging. PRSL limits do not apply to *indirect* chemicals.
- **MRSL:** applies to all chemical substances used within manufacturing facilities, including both *direct* and *indirect* chemicals.

The difference between *direct* and *indirect* chemical is that direct chemical will become part of the finished good, while indirect chemicals may be used during the manufacturing process, but is not intended to remain with the finished product. Examples of *direct* chemicals include inks, adhesives, dyes, and colourants. Example of *indirect* chemicals include cleaners, detergents, chemicals used for instrument maintenance, wastewater treatment, sanitation and pest control.

The purpose of the MRSL is to avoid the use of certain chemicals and remove those hazardous substances altogether from the manufacturing process. Suppliers should review their complete chemical formulation portfolio for compliance with the MRSL and substitute non-compliant chemical formulations with compliant formulations. There should be no intentional use of substances with MRSL limits. Incidental occurrence of MRSL substances should not exceed the related MRSL limits.

Avery Dennison is committed to the elimination of hazardous substances as listed in the ZDHC MRSL from use and discharge from our facilities. We seek to work with chemical suppliers that are registered on the ZDHC Gateway chemical module, with sourcing preference for ZDHC MRSL Level 1 or above conformance chemicals. We continuously strive to substitute hazardous chemicals with safer alternatives and better environmental profiles wherever possible.

All components of the products supplied to Avery Dennison, whether as raw materials or finished products, are required to comply with the RSL provisions. Suppliers are responsible for ensuring the content of each substance listed in the RSL does not exceed the maximum allowed value or is not detected above the detection limit based on the specified analytical test methods.

Compliance with the RSL is a requirement for Avery Dennison suppliers, whether suppliers of raw materials or suppliers of finished products. Please notify Avery Dennison Global Compliance at email rbis.ww.productcompliance@averydennison.com to obtain pre-approval if your material or product cannot comply with our RSL's and/ or applicable legislation.

Best Regards,

Debbie Shakespeare - Senior Director, Sustainability, Compliance and Core Product Line Management
Avery Dennison Apparel Solutions
Email: rbis.ww.productcompliance@averydennison.com
Website to download ADRSL: http://www.myrbis.averydennison.com/RSL

2. Legal Compliance

It is the obligation of Avery Dennison's supplier to ensure all materials and products supplied to Avery Dennison are in compliance with applicable law and regulations. Please ensure in any event that the following regulations are observed and followed:

a. California Proposition 65
No article or component shall contain chemicals on the Proposition 65 list exceeding the "no significant risk level" (NSRL). If there is no published NSRL on certain chemicals on the Proposition 65 list, supplied items shall not contain such chemicals in levels harmful to human health and the environment. For more information, please refer to the following website:
https://oehha.ca.gov/proposition-65

b. CHCC - Chemicals of High Concern to Children
Currently there are 5 US states (Maine, Oregon, Vermont, Washington and New York) with state law requiring manufacturers to report children's products containing certain chemicals of concern to the state. If any material/ product, supplied to Avery Dennison intended for children under 12 years of age, contains intentionally added CHCC at a level above the Practical Quantification Limit (PQL), or CHCC at concentration level exceeding 100ppm, supplier must have reported to the states pursuant to the respective state law, or notified Avery Dennison compliance team of the CHCC content in writing. For more information, please refer to the following websites:
Maine: *https://www.maine.gov/dep/safechem/childrens-products/index.html*
New York: *https://www.nysenate.gov/legislation/bills/2019/A9505*
Oregon:*https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/HEALTHYNEIGHBORHOODS/TOXICSUBSTANCES/Pages/childrens-chemicals-of-concern.aspx*
Vermont: *http://www.healthvermont.gov/environment/children/chemicals-childrens-products*
Washington: *https://ecology.wa.gov/Regulations-Permits/Reporting-requirements/Reporting-for-Childrens-Safe-Products-Act/Chemicals-of-high-concern-to-children*

c. Conflict Minerals
No materials or products, semi-finished or finished, supplied to Avery Dennison may contain conflict minerals as identified under Dodd-Frank Wall Street Reform and Consumer Protection Act Section 1502 Conflict Minerals Statutory Provision. Conflict minerals are defined as the following minerals originated from Democratic Republic of the Congo and adjoining countries that may directly or indirectly benefited armed groups:
- Columbite-Tantalite, also known as coltan (metal ore from which Tantalum is extracted);
- Cassiterite (the metal ore from which Tin is extracted);
- Gold;
- Wolframite (the metal ore from which Tungsten is extracted);
- or derivatives of above minerals

Please refer to the following website for conflict mineral related information:
https://www.sec.gov/rules/final/2012/34-67716.pdf

d. REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals
REACH is a European Community regulation on chemicals and their safe use. All requirements of EU and UK REACH must be followed. Articles supplied to Avery Dennison must not contain any substance listed in the latest REACH SVHC list above the limit of 0.1% weight by weight (w/w).
Candidate list of SVHC will be updated periodically, for the latest SVHC candidate list, please refer to ECHA website below:
https://echa.europa.eu/candidate-list-table
For information on UK REACH please refer to following website:
https://www.hse.gov.uk/reach/index.htm

e. 2011/65/EU RoHS – Restriction of the use of certain Hazardous Substances

RoHS directive restricts the use of hazardous substances in electrical and electronic equipment. Unless the product is specifically listed as one of the exemptions, all electrical and electronic items including RFID chips and antenna supplied to Avery Dennison cannot contain hazardous substances restricted under RoHS in excess of the allowable limits.
Please refer to the following website for details of the directive and list of restricted chemicals: *https://ec.europa.eu/growth/single-market/european-standards/harmonised-standards/restriction-of-hazardous-substances_en*

f. Packaging and Packaging Waste

EU directive 94/62/EC and United States' Toxics in Packaging Clearinghouse Model Legislation (TPCH) were developed to reduce the amount of heavy metals in packaging and packaging components. Any package or packaging component supplied to Avery Dennison shall fully comply with the aforementioned packaging regulations. The sum of the concentration levels of the four metals (lead, mercury, cadmium, and hexavalent chromium) shall not exceed 100 ppm. TPCH further prohibits the intentional introduction of the four heavy metals, PFAS and phthalates during manufacturing or distribution of packaging and packaging materials.
Please refer to the following websites for 94/62/EC and TPCH related information:
EU: *https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:01994L0062-20150526*
USA: *https://toxicsinpackaging.org/model-legislation/model/*

g. Persistent Organic Pollutants (POPs)

POPs are chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and the environment. This group of priority pollutants consists of pesticides (such as DDT), industrial chemicals (such as polychlorinated biphenyls, PCBs) and unintentional by-products of industrial processes (such as dioxins and furans). All materials/ products supplied to Avery Dennison must comply with the specifications under Regulation (EU) 2019/1021 and its amendments.
Please refer to the following website for details of the POPs related regulations: *https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32019R1021*

h. Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act of 1976 (15 USC 2601-2692) administered by the United States Environmental Protection Agency (EPA) regulates chemicals in the USA and is responsible to prevent unreasonable risk to support chemical safety. All materials/ products supplied to Avery Dennison must be either listed on the TSCA Chemical Substance Inventory or be exempted/excluded from listing. If the substance is subject to a Significant New Use Rule (SNUR), all requirements must be fulfilled.
Please refer to the TSCA Chemical Substance Inventory website below for more information:
https://www.epa.gov/tsca-inventory

i. Other Legislation

All materials/ products supplied to Avery Dennison must meet the latest requirements set forth by any and all other lists of restricted chemicals designated by relevant law and regulatory authorities in the product or material's country of origin and all countries in which the finished product may be offered for sale. These requirements may include by not limited to the Canadian CCPSA, Chinese GB standards, South Korean K-REACH, and US Code of Federal Regulations 16 (16 CFR).

3. RSL and Limits

Category: Azo Dyes

PRSL Test Method	ISO 14362-1:2017 (Others)/ ISO 17234-1:2020 (Leather); pAAB Confirmation: ISO 14362-3:2017 (Others)/ ISO 17234-2:2011 (Leather)
MRSL Test Method	ISO 14362-1:2017/ pAAB Confirmation: ISO 14362-3:2017

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
4-Aminobiphenyl	92-67-1	Usage Ban (Each 20 mg/kg)	Each 150 mg/kg
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		
4-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-chloraniline)	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-Aminoazobenzene	60-09-3		
2,4-Xylidine	95-68-1		
2,6-Xylidine	87-62-7		

4-Chloro-o-toluidine Hydrochloride	3165-93-3	Usage Ban (Each 20 mg/kg)	Each 150 mg/kg
2-Naphthylammonium Acetate	553-00-4		
4-Methoxy-m-phenylenediammonium Sulphate	39156-41-7		
2,4,5-Trimethylaniline Hydrochloride	21436-97-5		
Aniline	62-53-3		500 mg/kg
4-Ethoxyaniline	156-43-4		/
2,5-Diaminotoluene	95-70-5		
3,3-Diaminobenzidine	91-95-2		

Additional Azo Dyes

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
1,4-Phenylenediamine	106-50-3	Usage Ban (10 mg/kg)	/
m-Toluidine	108-44-1	Usage Ban (Each 20 mg/kg)	
p-Toluidine	106-49-0		
4-Amino-3-fluorophenol (FAP)	399-95-1		
6-Amino-2-ethoxynaphthalene	293733-21-8		
p-Phenylenediamine Dihydrochloride	624-18-0	1000 mg/kg	

Category: Alkylphenols (APs) and Alkylphenol Ethoxylates (APEOs)

PRSL Test Method	APs: ISO 21084:2019 (Textile & Leather)/ THF Extraction (Polymer); APEOs: ISO 18254-1:2016 (Others)/ ISO 18218-1:2015 (Leather)/ THF Extraction (Polymer)
MRSL Test Method	APs: ISO 21084:2019; APEOs: ISO 18254-1:2016

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Nonylphenol Ethoxylates (NPEOs)	Various	Sum 100 mg/kg	Each 250 mg/kg
Octylphenol Ethoxylates (OPEOs)			
Nonylphenol (NP)		Sum 5 mg/kg	Each 100 mg/kg
Octylphenol (OP)			
Heptylphenol (HpPs)			/
Pentylphenol (PePs)			
4-Tert-butylphenol (BP)	98-54-4		

Category: Biocides

PRSL Test Method	Solvent Extraction, GC-MS/ LC-MS/ LC-MSMS Analysis
MRSL Test Method	ISO 22992-2:2020

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Triclosan	3380-34-5	Usage Ban (Each 5 mg/kg)	250 mg/kg
Benzalkonium Chloride (BKC)	63449-41-2		/
1,2-Benzisothiazol-3(2H)-one (BIT)	2634-33-5		
5-Chloro-2-methyl-2H-isothiazol-3-one (CIT)	26172-55-4		
2-Methylisothiazol-3(2H)-one (MIT)	2682-20-4		
2-Octylisothiazol-3(2H)-one (OIT)	26530-20-1		
4-Chloro-3-methylphenol (CMK)	59-50-7	Usage Ban (Each 0.5 mg/kg)	
Polychlorinated Biphenyls (PCBs)	1336-36-3/ 53469-21-9		
Polychlorinated Terphenyls (PCTs)	61788-33-8		
Triclocarban	101-20-2		
2-Chloro-N-(hydroxymethyl)acetamide	2832-19-1	Usage Ban (Each 1 mg/kg)	
Polybrominated Terphenyls (PBTs)	Various		
2-Mercaptobenzothiazole (MBT)	149-30-4	Usage Ban (10 mg/kg)	
4,5-Dichloro-2-octylisothiazol-3(2H)-one (DCOIT)	64359-81-5	Usage Ban (15 mg/kg)	
2-Chloroacetamide	79-07-2	Each 50 mg/kg	
2-(Thiocyanomethylthio)benzothiazole (TCMTB)	21564-17-0		
Zinc Pyrithione	13463-41-7	Usage Ban (1000 mg/kg)	

* Any biocides used in product/ material intended for EU market must comply with regulation (EU) No. 528/2012.

Category: Bisphenols

PRSL Test Method	Solvent Extraction, LC-MS Analysis
MRSL Test Method	Solvent Extraction, GC-MS/ LC-MSMS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Bisphenol A (BPA)	80-05-7	Usage Ban (0.01 mg/kg)	100 mg/kg
Bisphenol AF (BPAF)	1478-61-1	Usage Ban (Each 1 mg/kg)	/
Bisphenol B (BPB)	77-40-7		
Bisphenol F (BPF)	620-92-8		
Bisphenol S (BPS)	80-09-1		

Category: Butylated Hydroxytoluene (BHT)

PRSL Test Method	ASTM D4275

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Butylated Hydroxytoluene (BHT)	128-37-0	Usage Ban (1 mg/kg)	/

Category: Cationic Surfactants

PRSL Test Method	Solvent Extraction, LC-MS Analysis; Acid Digestion, ICP-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Distearyl Dimethyl Ammonium Chloride (DSDMAC)	107-64-2	Usage Ban (Each 10 mg/kg)	/
Ditallow Dimethyl Ammonium Chloride (DTDMAC)	68783-78-8		
Dihydrogenated Tallow Dimethyl Ammonium Chloride (DHTDMAC)	61789-80-8		
Cobalt Dichloride	7646-79-9	Usage Ban (100 mg/kg)	

Category: Chlorinated Organic Carriers (COCs)

PRSL Test Method	EN 17137:2018
MRSL Test Method	EN 17137:2018

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Chlorotoluenes	Various	Sum 1 mg/kg	1,2-Dichlorobenzene: 500 mg/kg; Trichlorotoluenes, Tetrachlorotoluenes: Each 10 mg/kg; Sum 200 mg/kg
Dichlorotoluenes			
Trichlorotoluenes			
Tetrachlorotoluenes			
Pentachlorotoluene	877-11-2		
Chlorobenzene	108-90-7		
Dichlorobenzenes	Various		
Trichlorobenzenes			
Tetrachlorobenzenes			
Pentachlorobenzene	608-93-5		
Hexachlorobenzene	118-74-1		
Benzyl Chloride	100-44-7		Dye: 100 mg/kg; Others: 50 mg/kg
Benzotrichloride	98-07-7		/
p-Chlorobenzotrichloride	5216-25-1		

Additional Chlorinated Organic Carriers (COCs)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Biphenyl	92-52-4	1 mg/kg	/
Chloronaphthalenes	Various	Each 2 mg/kg	
Chloroxylenes			
1-Methylnaphthalene	90-12-0	Each 50 mg/kg	
2-Methylnaphthalene	91-57-6		

Category: Chlorinated Phenols

PRSL Test Method	DIN 50009:2021
MRSL Test Method	OPP: EN 17134:2019 (Textile)/ ISO 13365-1:2020 (Leather); Others: DIN 50009:2021/ ISO 17070:2015

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Pentachlorophenol (PCP)	87-86-5	Each 0.05 mg/kg	5 mg/kg
Tetrachlorophenols (TeCP): 2,3,4,5-Tetrachlorophenol; 2,3,4,6-Tetrachlorophenol; 2,3,5,6-Tetrachlorophenol	25167-83-3: 4901-51-3; 58-90-2; 935-95-5		Sum 15 mg/kg
Trichlorophenols (TriCP): 2,3,4-Trichlorophenol; 2,3,5-Trichlorophenol; 2,3,6-Trichlorophenol; 2,4,5-Trichlorophenol; 2,4,6-Trichlorophenol; 3,4,5-Trichlorophenol	25167-82-2: 15950-66-0; 933-78-8; 933-75-5; 95-95-4; 88-06-2; 609-19-8		Sum 50 mg/kg
Monochlorophenols (MCP): 2-Chlorophenol; 3-Chlorophenol; 4-Chlorophenol	25167-80-0: 95-57-8; 108-43-0; 106-48-9	Sum 0.5 mg/kg	
Dichlorophenols (DCP): 2,3-Dichlorophenol; 2,4-Dichlorophenol; 2,5-Dichlorophenol; 2,6-Dichlorophenol; 3,4-Dichlorophenol; 3,5-Dichlorophenol	25167-81-1: 576-24-9; 120-83-2; 583-78-8; 87-65-0; 95-77-2; 591-35-5		
O-Phenylphenol (OPP)	90-43-7	10 mg/kg	5000 mg/kg

Category: Formaldehyde

PRSL Test Method	ISO 14184-1:2011 (Others)/ ISO 17226-1:2021 (Leather)
MRSL Test Method	GB/T 23993

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Formaldehyde	50-00-0	Children <36 Months: 10 mg/kg; Others: 50 mg/kg	Cleaning Agent: 5000 mg/kg

Category: Disperse Dyes, Carcinogenic Dyes and Other Restricted Dyes

PRSL Test Method	DIN 54231:2005; Acid Digestion, ICP-MS Analysis
MRSL Test Method	DIN 54231:2005

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Quinoline	91-22-5	50 mg/kg	1000 mg/kg
Acid Red 26	3761-53-3	Usage Ban (Each 15 mg/kg)	Each 250 mg/kg
Acid Violet 49	1694-09-3		
Basic Blue 26	2580-56-5		
Basic Green 4: Malachite Green	10309-95-2		
Basic Green 4: Malachite Green Chloride	569-64-2		
Basic Green 4: Malachite Green Oxalate	2437-29-8/ 18015-76-4		
Basic Green 4: Leucomalachite Green	129-73-7		
Basic Red 9	569-61-9		
Basic Violet 3	548-62-9		
Basic Violet 14	632-99-5		
Direct Black 38	1937-37-7		
Direct Blue 6	2602-46-2		
Direct Red 28	573-58-0		
Disperse Blue 1	2475-45-8		
Disperse Blue 3	2475-46-9		
Disperse Blue 7	3179-90-6		
Disperse Blue 26	3860-63-7		
Disperse Blue 35	12222-75-2/ 56524-77-7/ 56524-76-6		
Disperse Blue 102	12222-97-8		
Disperse Blue 106	12223-01-7		
Disperse Blue 124	61951-51-7		
Disperse Brown 1	23355-64-8		
Disperse Orange 1	2581-69-3		
Disperse Orange 3	730-40-5		

Disperse Orange 11	82-28-0	Usage Ban (Each 15 mg/kg)	Each 250 mg/kg
Disperse Orange 37/ 59/ 76	12223-33-5/ 13301-61-6/ 51811-42-8		
Disperse Red 1	2872-52-8		
Disperse Red 11	2872-48-2		
Disperse Red 17	3179-89-3		
Disperse Yellow 1	119-15-3		
Disperse Yellow 3	2832-40-8		
Disperse Yellow 9	6373-73-5		
Disperse Yellow 39	12236-29-2		
Disperse Yellow 49	54824-37-2		
Acid Red 114	6459-94-5		/
Basic Violet 1	8004-87-3		
Basic Yellow 2	2465-27-2		
Direct Blue 15	2429-74-5		
Direct Brown 95	16071-86-6		
Disperse Orange 149	85136-74-9		
Disperse Red 151	61968-47-6		
Disperse Yellow 7	6300-37-4		
Disperse Yellow 23	6250-23-3		
Disperse Yellow 56	54077-16-6		
Pigment Red 104	12656-85-8		
Pigment Yellow 34	1344-37-2		
Solvent Blue 4	6786-83-0		
Solvent Yellow 2	60-11-7		
Solvent Yellow 14	842-07-9		
Solvent Yellow 34	492-80-8		
4,4'-Bis(dimethylamino)-4''-(methylamino)trityl Alcohol	561-41-1		
Navy Blue	118685-33-9		

Additional Disperse Dyes, Carcinogenic Dyes and Other Restricted Dyes

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Acid Black 29	12217-14-0	Usage Ban (Each 15 mg/kg)	/
Acid Black 94	6358-80-1		
Acid Black 131	12219-01-1		
Acid Black 132	12219-02-2		
Acid Black 209	72827-68-0		
Acid Brown 415	97199-27-4		
Acid Orange 24	1320-07-6		
Acid Orange 45	2429-80-3		
Acid Red 4	5858-39-9		
Acid Red 5	5858-63-9		
Acid Red 24	5858-30-0		
Acid Red 73	5413-75-2		
Acid Red 85	3567-65-5		
Acid Red 115	6226-80-8		
Acid Red 116	6245-62-1		
Acid Red 128	6548-30-7		
Acid Red 148	6300-53-4		
Acid Red 150	6226-78-4		
Acid Red 158	8004-55-5		
Acid Red 167	61901-41-5		
Acid Red 264	6505-96-0		
Acid Red 265	6358-43-6		
Acid Red 420	/		
Acid Violet 12	6625-46-3		
Basic Brown 4	8005-78-5		
Basic Red 42	12221-66-8		
Basic Red 111	118658-98-3		
Direct Black 4	2429-83-6		
Direct Black 29	3626-23-1		

Direct Black 91	6739-62-4	Usage Ban (Each 15 mg/kg)	/
Direct Black 154	37372-50-2		
Direct Blue 1	2610-05-1		
Direct Blue 2	2429-73-4		
Direct Blue 3	2429-72-3		
Direct Blue 8	2429-71-2		
Direct Blue 9	6428-98-4		
Direct Blue 10	4198-19-0		
Direct Blue 14	72-57-1		
Direct Blue 22	2586-57-4		
Direct Blue 25	2150-54-1		
Direct Blue 35	6473-33-2		
Direct Blue 53	314-13-6		
Direct Blue 76	16143-79-6		
Direct Blue 151	110735-25-6		
Direct Blue 160	12222-02-5		
Direct Blue 173	12235-72-2		
Direct Blue 192	71838-51-2		
Direct Blue 201	60800-55-7		
Direct Blue 215	6771-80-8		
Direct Blue 218	28407-37-6		
Direct Blue 295	6420-22-0		
Direct Brown 1	3811-71-0		
Direct Brown 1:2	2586-58-5		
Direct Brown 2	2429-82-5		
Direct Brown 6	2893-80-3		
Direct Brown 25	33363-87-0		
Direct Brown 27	6360-29-8		
Direct Brown 31	2429-81-4		
Direct Brown 33	1324-87-4		
Direct Brown 51	4623-91-0		

Direct Brown 59	3476-90-2	Usage Ban (Each 15 mg/kg)	/
Direct Brown 79	6483-77-8		
Direct Brown 101	3626-29-7		
Direct Brown 154	6360-54-9		
Direct Brown 222	64743-15-3		
Direct Green 1	3626-28-6		
Direct Green 6	4335-09-5		
Direct Green 8	5422-17-3		
Direct Green 8:1	76012-70-9		
Direct Green 85	72390-60-4		
Direct Orange 1	54579-28-1		
Direct Orange 6	6637-88-3		
Direct Orange 7	2868-76-0		
Direct Orange 8	64083-59-6		
Direct Orange 10	6405-94-3		
Direct Orange 108	6358-79-8		
Direct Red 1	2429-84-7		
Direct Red 2	992-59-6		
Direct Red 7	2868-75-9		
Direct Red 10	2429-70-1		
Direct Red 13	1937-35-5		
Direct Red 17	2769-07-5		
Direct Red 21	6406-01-5		
Direct Red 22	6448-80-2		
Direct Red 24	6420-44-6		
Direct Red 26	3687-80-7		
Direct Red 37	3530-19-6		
Direct Red 39	6358-29-8		
Direct Red 44	2302-97-8		
Direct Red 46	6548-29-4		
Direct Red 62	6420-43-5		

Direct Red 67	6598-56-7	Usage Ban (Each 15 mg/kg)	/
Direct Red 72	8005-64-9		
Direct Violet 1	2586-60-9		
Direct Violet 12	2429-75-6		
Direct Violet 21	6470-45-7		
Direct Violet 22	6426-67-1		
Direct Yellow 1	6472-91-9		
Direct Yellow 24	6486-29-9		
Direct Yellow 48	6459-97-8		
Pigment Black 25	68186-89-0		
Pigment Yellow 157	68610-24-2		
Solvent Orange 7	3118-97-6		
Solvent Red 19	6368-72-5		
Solvent Red 23	85-86-9		
Azobenzene	103-33-3		
Lead Chromate	7758-97-6		

Category: Dimethyl Formamide (DMFa)

PRSL Test Method	EN 17131:2019 (Textile)/ ISO/TS 16189:2013 (Others)
MRSL Test Method	ISO/TS 16189:2013

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Dimethyl Formamide (DMFa)	68-12-2	50 mg/kg	1000 mg/kg

Category: Dimethyl Fumarate (DMFu)

PRSL Test Method	ISO 16186:2021
MRSL Test Method	ISO 16186:2021

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Dimethyl Fumarate (DMFu)	624-49-7	0.03 mg/kg	10 mg/kg

Category: Flame Retardants

PRSL Test Method	SCCPs & MCCPs: ISO 22818:2021 (Textile)/ 5mLTHF Ultrasonic 30 min at 70°C, Shaking for 30 min, then add 10mL ACN and Ultrasonic 30 min at 70°C, Filtrate with PTFE 0.45μm (Polymer); SCCPs: ISO 18219-1:2021 (Leather); MCCPs: ISO 18219-2:2021 (Leather); Others: ISO 17881-1:2016; ISO 17881-2:2016; Acid Digestion, ICP-MS Analysis
MRSL Test Method	SCCPs, MCCPs: ISO 22818:2021; Others: Solvent Extraction, GC-MS/ LC-MS Analysis; Acid Digestion, ICP-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
2,2-Bis(bromomethyl)-1,3-propanediol (BBMP)	3296-90-0	Usage Ban (Each 5 mg/kg)	Each 250 mg/kg
Bis(2,3-dibromopropyl) Phosphate (BDBPP)	5412-25-9		
Hexabromocyclododecane (HBCDD)	3194-55-6/ 25637-99-4/ 134237-50-6/ 134237-51-7/ 134237-52-8		
Polybromobiphenyls (PBBs): Bromobiphenyl (MonoBB); Dibromobiphenyl (DiBB); Tribromobiphenyl (TriBB); Tetrabromobiphenyl (TetraBB); Pentabromobiphenyl (PentaBB); Hexabromobiphenyl (HexaBB); Heptabromobiphenyl (HeptaBB); Octabromobiphenyl (OctaBB); Nonabromobiphenyl (NonaBB); Decabromobiphenyl (DecaBB)	59536-65-1: Various; Various; Various; Various; Various; Various; Various; Various; Various; 13654-09-6		
Polybromodiphenyl Ethers (PBDEs): Bromodiphenyl Ether (MonoBDE); Dibromodiphenyl Ether (DiBDE); Tribromodiphenyl Ether (TriBDE); Tetrabromodiphenyl Ether (TetraBDE); Pentabromodiphenyl Ether (PentaBDE); Hexabromodiphenyl Ether (HexaBDE); Heptabromodiphenyl Ether (HeptaBDE); Octabromodiphenyl Ether (OctaBDE); Nonabromodiphenyl Ether (NonaBDE); Decabromodiphenyl Ether (DecaBDE)	Various: Various; Various; Various; 40088-47-9; 32534-81-9; 36483-60-0; 68928-80-3; 32536-52-0; 63936-56-1; 1163-19-5		
Tetrabromobisphenol A (TBBPA)	79-94-7		
Tetrabromobisphenol A Bis(2,3-dibromopropyl Ether) (TBBPA-DBPE)	21850-44-2		
Tris(2-chloroethyl) Phosphate (TCEP)	115-96-8		
Tris(1-chloro-2-propyl) Phosphate (TCPP)	13674-84-5		

Tris(1,3-dichloro-isopropyl) Phosphate (TDCPP)	13674-87-8	Usage Ban (Each 5 mg/kg)	Each 250 mg/kg
Tris(1-aziridinyl)phosphine Oxide (TEPA)	545-55-1		
Trimethyl Phosphate (TMP)	512-56-1		
Tri-o-cresyl Phosphate (TOCP)	78-30-8		
Tris(2,3-dibromopropyl) Phosphate (TRIS)	126-72-7		
Trixylyl Phosphate (TXP)	25155-23-1		
Short-chain Chlorinated Paraffins (SCCPs) (C10 to C13)	85535-84-8	Usage Ban (30 mg/kg)	
Medium-chain Chlorinated Paraffins (MCCPs) (C14 to C17)	85535-85-9	Usage Ban (50 mg/kg)	
Boric Acid	10043-35-3/ 11113-50-1	Usage Ban (Each 10 mg/kg)	
Diboron Trioxide	1303-86-2		
Disodium Octaborate	12008-41-2/ 12280-03-4		
Disodium Tetraborate, Anhydrous	1303-96-4/ 1330-43-4/ 12179-04-3		
Tetraboron Disodium Heptaoxide, Hydrate	12267-73-1		
Boric Acid, Zinc Salt	1332-07-6/ 12767-90-7		1000 mg/kg
Decabromodiphenyl Ethane (DBDPE)	84852-53-9	Usage Ban (5 mg/kg)	/

Additional Flame Retardants

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Di-tert-butylphenyl Phenyl Phosphate (DBPP)	65652-41-7	Usage Ban (Each 5 mg/kg)	/
Isopropylated Triphenyl Phosphate (IPTPP)	68937-41-7		
Tert-butylphenyl Diphenyl Phosphate (MDPP)	56803-37-3		
2-Ethylhexyl 2,3,4,5-Tetrabromobenzoate (TBB)	183658-27-7		
Bis(2-ethylhexyl) Tetrabromophthalate (TBPH)	26040-51-7		

Tris(tert-butylphenyl) Phosphate (TBPP)	78-33-1/ 28777-70-0	Usage Ban (Each 5 mg/kg)	/
Triphenyl Phosphate (TPP)	115-86-6		
2,2-Bis(chloromethyl)trimethylene Bis(bis(2-chloroethyl) Phosphate) (V6)	38051-10-4		
Chlorinated Paraffins	Various		
Phosphoryl Trichloride	10025-87-3		
Tris(2-carboxyethyl) Phosphine Hydrochloride	51805-45-9		
Antimony Trioxide	1309-64-4	Usage Ban (Each 1000 mg/kg)	
Long-chain Chlorinated Paraffins (LCCPs) (C18 to C28)	85535-86-0		

Category: Glycols

PRSL Test Method	Solvent Extraction, GC-MS/ LC-MS Analysis
MRSL Test Method	Solvent Extraction, GC-MS/ LC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
2-Methoxylpropanol	1589-47-5	Usage Ban (Each 5 mg/kg)	Each 50 mg/kg
Bis(2-methoxyethyl) Ether	111-96-6		
2-Methoxyethanol	109-86-4		Ink: Usage Ban; Others: Each 50 mg/kg
1,2-Dimethoxyethane	110-71-4		
2-Methoxyethyl Acetate	110-49-6	40 mg/kg	
2-Ethoxyethyl Acetate	111-15-9	Each 50 mg/kg	
1,2-Bis(2-methoxyethoxy)ethane	112-49-2		
2-Methoxypropyl Acetate	70657-70-4		50 mg/kg
2-Butoxyethyl Acetate	112-07-2	10 mg/kg	/
1-Methoxypropan-2-ol	107-98-2	Usage Ban (50 mg/kg)	

Category: Heavy Metals

Total Heavy Metals

PRSL Test Method	Lead (Pb): CPSC-CH-E1001-08.3 (Metal)/ CPSC-CH-E1002-08.3 (Non-Metal)/ CPSC-CH-E1003-09.1 (Paint and Surface Coating); Others: EN 16711-1:2016 (Others)/ ISO 17072-2:2019 (Leather)
MRSL Test Method	Acid Digestion, AAS/ ICP-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Total Arsenic (As)	7440-38-2	1 mg/kg	50 mg/kg
Total Cadmium (Cd)	7440-43-9	Textile & Leather: 1 mg/kg; Others: 5 mg/kg	Pigment: 50 mg/kg; Others: 20 mg/kg
Total Lead (Pb)	7439-92-1	30 mg/kg	100 mg/kg
Total Mercury (Hg)	7439-97-6	0.02 mg/kg	Pigment: 25 mg/kg; Others: 4 mg/kg

Additional Total Heavy Metals

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Total Antimony (Sb)	7440-36-0	200 mg/kg	Dye: 50 mg/kg; Pigment: 250 mg/kg
Total Barium (Ba)*[2]	7440-39-3	Dye & Pigment: 100 mg/kg; Others: 1000 mg/kg	Dye & Pigment: 100 mg/kg
Total Chromium (Cr)*[1]	7440-47-3	100 mg/kg	Dye & Pigment: 100 mg/kg
Total Cobalt (Co)	7440-48-4	100 mg/kg	Dye: 500 mg/kg
Total Copper (Cu)*[2]	7440-50-8	Dye: 250 mg/kg	Dye: 250 mg/kg
Total Nickel (Ni)*[2]	7440-02-0	Dye: 250 mg/kg	Dye: 250 mg/kg
Total Selenium (Se)*[2]	7782-49-2	Dye: 20 mg/kg; Pigment: 100 mg/kg; Others: 500 mg/kg	Dye: 20 mg/kg; Pigment: 100 mg/kg
Total Silver (Ag)*[2]	7440-22-4	Dye: 100 mg/kg	Dye: 100 mg/kg
Total Tin (Sn)*[2]	7440-31-5	Dye: 250 mg/kg	Dye: 250 mg/kg

*[1] Exclude Leather Material

*[2] The total heavy metal limits do not apply to dyes and pigments containing a listed metal as an inherent compositional part (e.g. metal-complex colourants, the double salts of certain cationic colourants or extenders like barium sulfate). In these cases, the extractable content of the corresponding metal has to be considered.

Chromium VI (On Leather Material)

PRSL Test Method	ISO 17075-1:2017
MRSL Test Method	ISO 17075-1:2017

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Chromium VI (Cr VI)	18540-29-9	Children <36 Months: 0.5 mg/kg; Others: 3 mg/kg	10 mg/kg

Nickel Release (On Metal Components)

PRSL Test Method	EN 12472:2020 and EN 1811:2011+A1:2015

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Nickel (Ni) Release	7440-02-0	0.5 µg/cm^2/week	/

Soluble Heavy Metals (On Surface Coating that can be Scrapped off by Lab)

PRSL Test Method	ASTM F963-17, Sections 8.3.2 to 8.3.4

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Soluble Antimony (Sb)	7440-36-0	30 mg/kg	/
Soluble Arsenic (As)	7440-38-2	25 mg/kg	
Soluble Barium (Ba)	7440-39-3	1000 mg/kg	
Soluble Cadmium (Cd)	7440-43-9	1 mg/kg	
Soluble Chromium (Cr)	7440-47-3	60 mg/kg	
Soluble Lead (Pb)	7439-92-1	23 mg/kg	
Soluble Mercury (Hg)	7439-97-6	60 mg/kg	
Soluble Selenium (Se)	7782-49-2	460 mg/kg	
If product/ material is used for toys or children's products for EU market, also need to comply with EN 71 Part 3: 2019 Migration of Certain Elements.			

Extractable Heavy Metals

PRSL Test Method	EN 16711-2:2016 (Others)/ ISO 17072-1:2019 (Leather)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Extractable Antimony (Sb)	7440-36-0	10 mg/kg	/
Extractable Arsenic (As)	7440-38-2	0.2 mg/kg	
Extractable Barium (Ba)	7440-39-3	1000 mg/kg	
Extractable Cadmium (Cd)	7440-43-9	0.1 mg/kg	
Extractable Chromium (Cr)*	7440-47-3	1 mg/kg	
Extractable Chromium VI (Cr VI)	18540-29-9	0.5 mg/kg	
Extractable Cobalt (Co)	7440-48-4	1 mg/kg	
Extractable Copper (Cu)	7440-50-8	25 mg/kg	
Extractable Lead (Pb)	7439-92-1	0.2 mg/kg	
Extractable Mercury (Hg)	7439-97-6	0.02 mg/kg	
Extractable Nickel (Ni)	7440-02-0	Children <36 Months: 0.5 mg/kg; Others: 1 mg/kg	
Extractable Selenium (Se)	7782-49-2	100 mg/kg	
* Exclude Leather Material			
Apply GB/T 17593.2:2007 if product is intended for China market.			

Heavy Metals in Packaging and Packaging Component (94/62/EC, TPCH)

PRSL Test Method	EN 16711-1:2016 ; Cr(VI) Confirmation: IEC 62321-7-1:2015 (Metal)/ IEC 62321-7-2:2015 (Others)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Cadmium (Cd)	7440-43-9	Sum 100 mg/kg	/
Lead (Pb)	7439-92-1		
Mercury (Hg)	7439-97-6		
Chromium VI (Cr VI)	18540-29-9		

Category: Isocyanates

PRSL Test Method	Free: Solvent Extraction, LC-MS Analysis; Block: Solvent Extraction, GC-MS Analysis with Injector Block Temperature at 300°C, Confirmation at 180°C

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
1,5-Naphthalene Diisocyanate (1,5-NDI)	3173-72-6	Free: Each 1 mg/kg; Block: Each 50 mg/kg	/
4,4'-Methylenediphenyl Diisocyanate (4,4-MDI)	101-68-8		
Hexamethylene Diisocyanate (HDI)	822-06-0		
Isophoron Diisocyanate (IPDI)	4098-71-9	Free: Each 1 mg/kg; Block: Each 100 mg/kg	
Tetramethylxylene Diisocyanate (TMXDI)	2778-42-9		
2,4-Toluene Diisocyanate (2,4-TDI)	584-84-9	Free: Each 1 mg/kg; Block: Each 15 mg/kg	
2,6-Toluene Diisocyanate (2,6-TDI)	91-08-7		
We intend to phase out isocyanate. For any materials containing isocyanate, please immediately contact Avery Dennison compliance team. For PU coating and plastic, we keep only for monitoring.			

Additional Isocyanates

PRSL Test Method	EN 13130-8:2004

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
2,2'-Methylenediphenyl Diisocyanate (2,2-MDI)	2536-05-2	Each 1 mg/kg	/
2,4'-Methylenediphenyl Diisocyanate (2,4-MDI)	5873-54-1		
2,6-Diisopropylphenyl Isocyanate (2,6-DPPI)	28178-42-9		
Methylene-bis(4-cyclohexylisocyanate) (MBCI)	5124-30-1		
Phenyl Isocyanate (PI)	103-71-9		

Category: Monomers

PRSL Test Method	Solvent Extraction, GC-MS/ LC-MS/ HS-GC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Propylene Oxide	75-56-9	Each 1 mg/kg	Ink: Usage Ban
2-Chlorobuta-1,3-diene	126-99-8		/
Acrylonitrile	107-13-1		
Ethyl Acrylate	140-88-5		
Methacrylamide	79-39-0		
N-Methylolacrylamide	924-42-5		
N-Vinyl-2-pyrrolidine (NVP)	88-12-0		
Acrylamide	79-06-1	0.1 mg/kg	
Ethyl Methacrylate	97-63-2	Each 10 mg/kg	
Methacrylic Acid	79-41-4		
Tert-butyl Acrylate	1663-39-4		
Vinyl Acetate	108-05-4		
2-Ethylhexyl Acrylate	103-11-7	Each 50 mg/kg	
4-Cyano-1-cyclohexene	100-45-8		
Butyl Acrylate	141-32-2		
Butyl Methacrylate	97-88-1		
Methyl Acrylate	96-33-3		
Methyl Methacrylate	80-62-6		

Category: Mineral Oils in Printing Ink for Packaging

PRSL Test Method	BfR Method, GC-FID Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
MOAH	/	1000 mg/kg; 3-7 Rings: 1 mg/kg	/
MOSH	/	1000 mg/kg	/

Category: Organotins

PRSL Test Method	ISO/TS 16179:2012
MRSL Test Method	ISO/TS 16179:2012

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Dibutyltin (DBT)	Various	Each 0.5 mg/kg	PU: 100 mg/kg; Others: 20 mg/kg
Dimethyltin (DMT)			Each 5 mg/kg
Dioctyltin (DOT)			
Diphenyltin (DPhT)			
Dipropyltin (DPT)			
Monobutyltin (MBT)			
Monomethyltin (MMT)			
Monooctyltin (MOT)			
Monophenyltin (MPhT)			
Tributyltin (TBT)		Usage Ban (Each 0.02 mg/kg)	
Trimethyltin (TMT)			
Trioctyltin (TOT)			
Triphenyltin (TPhT)			
Tripropyltin (TPT)			Each 1 mg/kg
Tricyclohexyltin (TCyHT)			
Tetrabutyltin (TeBT)		Each 0.5 mg/kg	
Tetraethyltin (TeET)			
Tetraoctyltin (TeOT)	3590-84-9		

Additional Organotins

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Dibutyltin Hydrogen Borate (DBB)	75113-37-0	Each 0.5 mg/kg	/
Dibutyltin Dichloride (DBTCl)	683-18-1		
Tributyltin Oxide (TBTO)	56-35-9	Usage Ban (0.02 mg/kg)	
Tri-substituted Organostannic Compounds (Including but not Limited to TBT, TPhT, TCyHT, TOT, TPT, TMT)	/	Usage Ban (Each 0.02 mg/kg); Sum 0.5 mg/kg	

Category: Perfluorinated Compounds (PFCs/ PFAS)

PRSL Test Method	Total Organic Fluorine: EN 14582:2016/ ASTM D7359:2018; Others: ISO 23702-1:2018
MRSL Test Method	Solvent Extraction, GC-MS/ LC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Perfluorooctanesulfonic Acid (PFOS)	1763-23-1	Usage Ban (Each 1 µg/m^2; 0.01 mg/kg)	Sum 2 mg/kg
Perfluorooctanesulfonic Acid, Potassium Salt (PFOS-K)	2795-39-3		
Perfluorooctanesulfonic Acid, Lithium Salt (PFOS-Li)	29457-72-5		
Perfluorooctanesulfonic Acid, Ammonium Salt (PFOS-NH_4)	29081-56-9		
Perfluorooctanesulfonic Acid, Diethanolamine Salt (PFOS-$NH(OH)_2$)	70225-14-8		
Perfluorooctanesulfonic Acid, Tetraethylammonium Salt (PFOS-$N(C_2H_5)_4$)	56773-42-3		
Didecyldimethyl Ammonium Perfluorooctane Sulfonate (PFOS-$N(C_{10}H_{21})_2(CH_3)_2$)	251099-16-8		
Perfluorooctanesulfonamide (PFOSA)	754-91-6		
Perfluorooctanesulfonfluoride (PFOSF)	307-35-7		
N-Methyl Perfluorooctanesulfonamide (N-Me-FOSA)	31506-32-8		
N-Ethyl Perfluorooctanesulfonamide (N-Et-FOSA)	4151-50-2		
N-Methyl Perfluorooctanesulfonamide Ethanol (N-Me-FOSE)	24448-09-7		
N-Ethyl Perfluorooctanesulfonamide Ethanol (N-Et-FOSE)	1691-99-2		
Perfluorooctanoic Acid (PFOA)	68141-02-6/ 335-67-1		Each 0.025 mg/kg
Silver Perfluorooctanoate (PFOA-Ag)	335-93-3		
Perfluorooctanoyl Fluoride (PFOA-F)	335-66-0		
Potassium Perfluorooctanoate (PFOA-K)	2395-00-8		
Sodium Perfluorooctanoate (PFOA-Na)	335-95-5		

Ammonium Pentadecafluorootanoate (APFO)	3825-26-1	Usage Ban (Each 1 μg/m^2; 0.01 mg/kg)	Each 0.025 mg/kg
Perfluorohexanoic Acid (PFHxA)	307-24-4		
1H,1H,2H,2H-Perfluorodecyl Acrylate (8:2 FTA)	27905-45-9		Each 1 mg/kg
1H,1H,2H,2H-Perfluorodecyl Methacrylate (8:2 FTMA)	1996-88-9		
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH)	2043-47-2		
1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH)	647-42-7		
1H,1H,2H,2H-Perfluoro-1-decanol (8:2 FTOH)	678-39-7		
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH)	865-86-1		
1H,1H,2H,2H-Perfluorodecanesulfonic Acid (8:2 FTS)	39108-34-4		
Methyl Perfluorooctanoate (Me-PFOA)	376-27-2		
Ethyl Perfluorooctanoate (Et-PFOA)	3108-24-5		
2H,2H-Perfluorodecanoic Acid (H2PFDA)	27854-31-5/ 882489-14-7		
Perfluorobutanoic Acid (PFBA)	375-22-4		
Perfluorodecanoic Acid (PFDA)	335-76-2		
Perfluorobutanesulfonic Acid (PFBS)	29420-49-3/ 375-73-5/ 59933-66-3		
Perfluorodecanesulfonic Acid (PFDS)	126105-34-8/ 335-77-3		
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4		
Perfluorohexanesulfonic Acid, Potassium Salt (PFHxS-K)	3871-99-6		/
Perfluorohexanesulfonic Acid, Lithium Salt (PFHxS-Li)	55120-77-9		
Perfluorohexanesulfonic Acid, Ammonium Salt (PFHxS-NH4)	68259-08-5		
Perfluorohexanesulfonic Acid, Sodium Salt (PFHxS-Na)	82382-12-5		
N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)	68259-15-4		

Perfluorohexanesulfonamide (PFHxSA)	41997-13-1	Usage Ban (Each 1 μg/m^2; 0.01 mg/kg)	/
Perfluoroheptanesulfonic Acid (PFHpS)	375-92-8		
Perfluoropentanoic Acid (PFPA)	2706-90-3		
Perfluoroheptanoic Acid (PFHpA)	375-85-9		
Perfluorononanoic Acid (PFNA)	375-95-1		
Perfluoroundecanoic Acid (PFUnA)	2058-94-8/ 4234-23-5		
Perfluorododecanoic Acid (PFDoA)	307-55-1		
Perfluorotridecanoic Acid (PFTrDA)	72629-94-8		
Perfluorotetradecanoic Acid (PFTeDA)	376-06-7		
Perfluoro-3,7-dimethyloctanoic Acid (PF-3,7-DMOA)	172155-07-6		
1H,1H,2H,2H-Perfluorooctyl Acrylate (6:2 FTA)	17527-29-6		
1H,1H,2H,2H-Perfluorododecyl Acrylate (10:2 FTA)	17741-60-5		
1H,1H,2H,2H-Perfluorododecyl Iodide (10:2 FTI)	2043-54-1		
1H,1H,2H,2H-Perfluorotetradecyl Iodide (12:2 FTI)	30046-31-2		
1H,1H,2H,2H-Perfluorododecyl Methacrylate (10:2 FTMA)	2144-54-9		
1H,1H,2H,2H-Perfluoro-1-tetradecanol (12:2 FTOH)	39239-77-5		
1H,1H,2H,2H-Perfluorododecane sulfonic Acid (10:2 FTS)	120226-60-0		
2H,2H,3H,3H-Perfluoroundecanoic Acid (H4PFUnA)	34598-33-9		
1H,1H,2H,2H- Perfluorooctanesulfonic Acid (H4PFOS)	27619-97-2		
7H-Perfluoroheptanoic Acid (H7PFHpA)	1546-95-8		

Additional Perfluorinated Compounds (PFCs/ PFAS)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Perfluorodecanesulfonic Acid, Potassium Salt (PFDS-K)	2806-16-8	Usage Ban (Each 1 μg/m^2; 0.01 mg/kg)	/
Perfluorodecanesulfonic Acid, Sodium Salt (PFDS-Na)	2806-15-7		

Perfluorocarboxylic Acids, Long Chain (C9-C20) (LC-PFCA)	Various	Usage Ban (Each 1 μg/m^2; 0.01 mg/kg)	/
All Other Perfluorinated or Polyfluorinated Compounds (Fully or Partially Fluorinated Compounds)			
Perfluoroalkyl Sulfonamido Ethanols (PFASE)		Usage Ban (Each 0.02 mg/kg)	
Perfluoroalkyl Sulfonamides (PFOSE)			
Perfluoroalkyl Sulfonates			
Perfluoroisobutylene (PFIB)	382-21-8	Each 0.1 mg/kg	
Tetrafluoroethylene (TFE)	116-14-3		
Total Organic Fluorine	Various	10 mg/kg	/

Category: N-Nitrosamines

PRSL Test Method	GB/T 24153-2009

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
N-Nitrosodimethylamine (NDMA)	62-75-9	Each 0.01 mg/kg	/
N-Nitrosodiethylamine (NDEA)	55-18-5		
N-Nitrosodipropylamine (NDPA)	621-64-7		
N-Nitrosodibutylamine (NDBA)	924-16-3		
N-Nitrosopiperidine (NPIP)	100-75-4		
N-Nitrosopyrrolidine (NPYR)	930-55-2		
N-Nitrosomorpholine (NMOR)	59-89-2		
N-Nitrosomethylphenylamine (NMPhA)	614-00-6		
N-Nitrosoethylphenylamine (NEPhA)	612-64-6		
N-Nitrosodiisobutylamine (NDiBA)	997-95-5		
N-Nitrosodibenzylamine (NDBzA)	5336-53-8	Each 0.5 mg/kg	
N-Nitrosodiethanolamine (NDELA)	1116-54-7		
N-Nitrosodiisononylamine (NDiNA)	1207995-62-7		
N-Nitrosodiisopropylamine (NDiPA)	601-77-4		
N-Nitrosomethylethylamine (NMEA)	10595-95-6		

Category: Pesticides

PRSL Test Method	Solvent Extraction, GC-MS Analysis
MRSL Test Method	Solvent Extraction, LC-MS/ GC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Permethrine	52645-53-1	Usage Ban (Each 0.5 mg/kg)	250 mg/kg
2-(2,4,5-Trichlorophenoxy) Propionic Acid, its Salts and Compound	93-72-1		/
2,4,5-Trichlorophenoxyacetic Acid (2,4,5-T)	93-76-5		
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94-75-7		
4,6-Dichloro-7-(2,4,5-trichlorophenoxy)-2-trifluoromethylbenzimidazole (DTTB)	63405-99-2		
Acetamiprid	135410-20-7/ 160430-64-8		
Aldicarb	116-06-3		
Aldine	309-00-2		
Azinophosethyl	2642-71-9		
Azinophosmethyl	86-50-0		
Bromophosethyl	4824-78-6		
Captafol	2425-06-1		
Carbaryl	63-25-2		
Carbendazim	10605-21-7		
Chlorbenzilate	510-15-6		
Chlordane	57-74-9		
Chlordimeform	6164-98-3		
Chlorfenvinphos	470-90-6		
Chlorthalonil	1897-45-6		
Clothianidin	210880-92-5		
Coumaphos	56-72-4		
Cyfluthrin	68359-37-5		
Cyhalothrin	91465-08-6		
Cypermethrin	52315-07-8		
Deltamethrin	52918-63-5		

Diazinon	333-41-5	Usage Ban (Each 0.5 mg/kg)	/
Dichlofluanide	1085-98-9		
Dichlorodiphenyldichloroethane (DDD)	53-19-0/ 72-54-8		
Dichlorodiphenyldichloroethylene (DDE)	3424-82-6/ 72-55-9		
Dichlorodiphenyltrichloroethane (DDT)	50-29-3/ 789-02-6		
Dichlorophene	97-23-4		
Dichloroprop	120-36-5		
Dicofol	115-32-2		
Dicrotophos	141-66-2		
Dieldrine	60-57-1		
Dimethoate	60-51-5		
Dinoseb, its Salts and Acetate	88-85-7		
Dinotefuran	165252-70-0		
Endosulfan: Endosulfan, α-; Endosulfan, β-	115-29-7: 959-98-8; 33213-65-9		
Endrine	72-20-8		
Esfenvalerate	66230-04-4		
Ethylenedibromide (EDB)	106-93-4		
Fenvalerate	51630-58-1		
Halogenated Naphthalenes including Polychlorinate Naphthalenes (PCNs)	Various		
Heptachlor	76-44-8		
Heptachlororepoxide	1024-57-3		
Hexachlorobenzene	118-74-1		
Hexachlorocyclohexane (HCH): Hexachlorocyclohexane, α-; Hexachlorocyclohexane, β-; Hexachlorocyclohexane, ∆-	608-73-1: 319-84-6; 319-85-7; 319-86-8		
Imidacloprid	105827-78-9/ 138261-41-3		
Isodrine	465-73-6		
Kelevane	4234-79-1		

Kepone	143-50-0	Usage Ban (Each 0.5 mg/kg)	/
Lindane	58-89-9		
Malathion	121-75-5		
MCPA	94-74-6		
MCPB	94-81-5		
Mecoprop	93-65-2		
Metamidophos	10265-92-6		
Methoxychlor	72-43-5		
Mirex	2385-85-5		
Monocrotophos	6923-22-4		
Nitenpyram	150824-47-8/ 120738-89-8		
Parathion	56-38-2		
Parathion-methyl	298-00-0		
Pentachloroanisole	1825-21-4		
Perthane	72-56-0		
Phosdrin/ Mevinphos	7786-34-7		
Phosphamidone	13171-21-6		
Profenophos	41198-08-7		
Propethamphos	31218-83-4		
Quinalphos	13593-03-8		
Quintozene	82-68-8		
Silafluofen	105024-66-6		
Strobane	8001-50-1		
Telodrine	297-78-9		
Thiacloprid	111988-49-9		
Thiamethoxam	153719-23-4		
Tolyfluanide	731-27-1		
Toxaphene	8001-35-2		
Tribufos (DEF)	78-48-8		
Trifluralin	1582-09-8		

Additional Pesticides

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	Usage Ban (Each 0.5 mg/kg)	/
Alachlor	15972-60-8		
Atrazine	1912-24-9		
Benzotriazole	95-14-7		
Binapacryl	485-31-4		
Chlordimeform Hydrochloride	19750-95-9		
Chlorpyrifos	2921-88-2		
Demeton-S-methyl	919-86-8		
Dichlofenthion	97-17-6		
Dichlorvos	62-73-7		
Dinitro-ortho-cresol (DNOC)	534-52-1		
Dinoterb	1420-07-1		
Disulfoton	298-04-4		
Diuron	330-54-1		
Ethylene Oxide	75-21-8		
Fenchlorphos	299-84-3		
Fenitrothion	122-14-5		
Glyphosate: Glyphosate-isopropylamine; Glyphosate-potassium; Glyphosate-monoammonium	1071-83-6: 38641-94-0; 70901-12-1; 40465-66-5		
Halogenated Diarylalkanes	Various		
Halogenated Diphenyl Methanes: Monomethyl-dichloro-diphenyl Methane; Monomethyl-dibromo-diphenyl Methane; Monomethyl-tetrachloro-diphenyl Methane	Various: 81161-70-8; 99688-47-8; 76253-60-6		
Isoproturon	34123-59-6		
Lead Hydrogen Arsenate	7784-40-9		
Linuron	330-55-2		
Methyl Bromide	74-83-9		
Monolinuron	1746-81-2		

Omethoate	1113-02-6	Usage Ban (Each 0.5 mg/kg)	/
Oxydemeton-methyl	301-12-2		
Paraquat	4685-14-7		
Paraquat Dichloride	1910-42-5		
Pentabromobenzene	608-90-2		
Pentane	109-66-0		
Phoxim	14816-18-3		
Propanil	709-98-8		
Pyrazon	1698-60-8		
Simazine	122-34-9		
Timiperone	57648-21-2		
Trichlorfon	52-68-6		
Tris(nonylphenyl) Phosphite (TNPP)	26523-78-4		
Vinclozolin	50471-44-8		

Category: pH

PRSL Test Method	ISO 3071:2020 (Textile)/ ISO 4045:2018 (Leather)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
pH Value on Textile and Leather Material	/	Textile: 4.0 – 7.5; Leather: 3.5 – 4.5	/

Category: Polyvinyl Chloride (PVC)

PRSL Test Method	Beilstein Test (Screening); Infrared Spectroscopy FT-IR (Confirmation)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Polyvinyl Chloride (PVC)	9002-86-2	Usage Ban (Each 1 %)	/
Polyvinylidene Chloride (PVDC)	9002-85-1		
Polychloroprene	9010-98-4		

Category: Phthalates

PRSL Test Method	CPSC-CH-C1001-09.4
MRSL Test Method	ISO 14389:2014

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Butyl Benzyl Phthalate (BBP)	85-68-7	Usage Ban (Each 50 mg/kg)	Sum 250 mg/kg
Dibutyl Phthalate (DBP)	84-74-2		
Dicyclohexyl Phthalate (DCHP)	84-61-7		
Diethylhexyl Phthalate (DEHP)	117-81-7		
Diethyl Phthalate (DEP)	84-66-2		
1,2-Benzenedicarboxylic Acid, Di-C7-11-branched and Linear Alkyl Esters (DHNUP)	68515-42-4		
1,2-Benzenedicarboxylic Acid, Dihexyl Ester, Branched and Linear (DHP)	68515-50-4		
Diisobutyl Phthalate (DIBP)	84-69-5		
Diisodecyl Phthalate (DIDP)	26761-40-0/ 68515-49-1		
1,2-Benzenedicarboxylic Acid, Di-C6-8-branched Alkyl Esters, C7-Rich (DIHP)	71888-89-6		
Diisohexyl Phthalate (DIHxP)	71850-09-4		
Diisononyl Phthalate (DINP)	28553-12-0/ 68515-48-0		
Diisooctyl Phthalate (DIOP)	27554-26-3		
Diisopentyl Phthalate (DIPP)	605-50-5		
Dimethoxyethyl Phthalate (DMEP)	117-82-8		
Di-n-hexyl Phthalate (DnHP)	84-75-3		
Di-n-octyl Phthalate (DnOP)	117-84-0		
Dinonyl Phthalate (DNP)	84-76-4		
Di-n-pentyl Phthalate (DnPP)	131-18-0		
1,2-Benzenedicarboxylic Acid, Dipentyl Ester, Branched and Linear (DPP)	84777-06-0		
Dipropyl Phthalate (DPRP)	131-16-8		
n-Pentyl-iso-pentyl Phthalate (PiPP)	776297-69-9		

Dimethyl Phthalate (DMP)	131-11-3	Usage Ban (Each 50 mg/kg)	/
1,2-Benzenedicarboxylic Acid, Di-C6-10-alkyl Esters	68515-51-5		
1,2-Benzenedicarboxylic Acid, Mixed Decyl and Hexyl and Octyl Diesters	68648-93-1		

Additional Phthalates

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Bis(2-butoxyethyl) Phthalate (BBEP)	117-83-9	Usage Ban (Each 50 mg/kg)	/
Butyl Cyclohexyl Phthalate (BCP)	84-64-0		
Bis(2-ethoxyethyl) Phthalate (BEEP)	605-54-9		
Bis(4-methyl-2-pentyl) Phthalate (BMPP)	146-50-9		
Butyl Octyl Phthalate (BOP)	84-78-6		
Diallyl Phthalate (DAP)	131-17-9		
Dibenzyl Phthalate (DBzP)	523-31-9		
Diheptyl Phthalate (DHeP)	3648-21-3		
Diisopropyl Phthalate (DIPRP)	605-45-8		
Di-(2-propylheptyl) Phthalate (DPHP)	53306-54-0		
Diphenyl Phthalate (DPhP)	84-62-8		
Ditridecyl Phthalate (DTDP)	119-06-2		
Diundecyl Phthalate (DuDP)	3648-20-2		
Hexyl 2-Ethylhexyl Phthalate (HEHP)	75673-16-4		
Mono-butyl Phthalate (MBP)	131-70-4		
n-Octyl n-Decyl Phthalate (ODP)	119-07-3		

Category: Odour

PRSL Test Method	SNV 195651

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Odour	/	Grade 2	/

Category: Polycyclic Aromatic Hydrocarbons (PAHs)

PRSL Test Method	AfPS GS 2019:01
MRSL Test Method	AfPS GS 2019:01

Restricted Substance Name/ Group	CAS #	PRSL Limit	MRSL Limit
Benzo(a)pyrene	50-32-8	Each 0.5 mg/kg; Sum 5 mg/kg	20 mg/kg
Benzo(e)pyrene	192-97-2		Sum 200 mg/kg
Benzo(a)anthracene	56-55-3		
Benzo(b)fluoranthene	205-99-2		
Benzo(j)fluoranthene	205-82-3		
Benzo(k)fluoranthene	207-08-9		
Benzo(g,h,i)perylene	191-24-2		
Chrysene	218-01-9		
Dibenzo(a,h)anthracene	53-70-3		
Indeno(1,2,3-cd)pyrene	193-39-5		
Acenaphthene	83-32-9		
Acenaphthylene	208-96-8		
Anthracene	120-12-7		
Fluoranthene	206-44-0		
Fluorene	86-73-7		
Phenanthrene	85-01-8		
Pyrene	129-00-0		
Naphthalene	91-20-3		
1-Methylpyrene	2381-21-7		/
Cyclopenta(c,d)pyrene	27208-37-3		
Dibenzo(a,e)pyrene	192-65-4		
Dibenzo(a,h)pyrene	189-64-0		
Dibenzo(a,i)pyrene	189-55-9		
Dibenzo(a,l)pyrene	191-30-0		

Additional Polycyclic Aromatic Hydrocarbons (PAHs)

PRSL Test Method	Solvent Extraction, GC-MS/ LC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Anthracene Oil	90640-80-5	Sum 50 mg/kg	/
Anthracene Oil, Anthracene-low	90640-82-7		
Anthracene Oil, Anthracene Paste	90640-81-6		
Anthracene Oil, Anthracene Paste, Anthracene Fraction	91995-15-2		
Anthracene Oil, Anthracene Paste, Distn. Lights	91995-17-4		

Category: Siloxanes

PRSL Test Method	Solvent Extraction, GC-MS Analysis
MRSL Test Method	Solvent Extraction, GC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Octamethylcyclotetrasiloxane (D4)	556-67-2	Each 1000 mg/kg	Each 1000 mg/kg
Decamethylcyclopentasiloxane (D5)	541-02-6		
Dodecamethylcyclohexasiloxane (D6)	540-97-6		

Category: UV Absorbers/ Stabilizers

PRSL Test Method	EN 62321-6:2016-05
MRSL Test Method	Solvent Extraction, GC-MS/ LC-MSMS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
2-Benzotriazol-2-yl-4,6-di-tert-butylphenol (UV-320)	3846-71-7	Each 1000 mg/kg	Each 1000 mg/kg
2,4-Di-tert-butyl-6-(5-chlorobenzotriazol-2-yl)phenol (UV-327)	3864-99-1		
2-(2H-Benzotriazol-2-yl)-4,6-ditertpentylphenol (UV-328)	25973-55-1		
2-(2H-Benzotriazol-2-yl)-4-(tert-butyl)-6-(sec-butyl)phenol (UV-350)	36437-37-3		

Category: Volatile Organic Compounds (VOCs)

PRSL Test Method	Solvent Extraction, GC-MS/ HS-GC-MS Analysis
MRSL Test Method	Solvent Extraction, GC-MS/ LC-MSMS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Benzene	71-43-2	Usage Ban (1 mg/kg)	Ink: Usage Ban; Others: Each 50 mg/kg
2-Ethoxyethanol	110-80-5	Usage Ban (Each 5 mg/kg)	
Dichloromethane (DCM)	75-09-2		5 mg/kg
Xylene: m-Xylene; o-Xylene; p-Xylene	1330-20-7: 108-38-3; 95-47-6; 106-42-3	5 mg/kg	Ink: Usage Ban; Others: 500 mg/kg
Cresols: m-Cresol; o-Cresol; p-Cresol	1319-77-3: 108-39-4; 95-48-7; 106-44-5	Usage Ban (10 mg/kg)	500 mg/kg

Additional Volatile Organic Compounds (VOCs)

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Perchloroethylene (PERC)	127-18-4	1 mg/kg	Each 5 mg/kg
1,2-Dichloroethane (EDC)	107-06-2	5 mg/kg	
N-Methyl-2-pyrrolidone (NMP)	872-50-4	Usage Ban (10 mg/kg)	Ink: Usage Ban; Others: 1000 mg/kg
Styrene	100-42-5	10 mg/kg	Ink: Usage Ban
Butyl Nitrite	544-16-1	Ink: Usage Ban (Each 10 mg/kg)	
Isopropyl Nitrite	541-42-4		
1,2-Diethoxyethane	629-14-1	Each 100 mg/kg	
Chloroform	67-66-3		Cleaning Agent: 5000 mg/kg
Toluene	108-88-3		Ink: Usage Ban; Cleaning Agent: 5000 mg/kg; Others: 500 mg/kg
N,N-Dimethylacetamide (DMAC)	127-19-5		Each 1000 mg/kg
N-Ethyl-2-pyrrolidone (NEP)	2687-91-4	30 mg/kg	

Ethylbenzene	100-41-4	15 mg/kg	Ink: Usage Ban; Cleaning Agent: 5000 mg/kg
Trichloroethylene (TCE)	79-01-6	Usage Ban (40 mg/kg)	40 mg/kg
Aminoethyl Ethanolamine (AEEA)	111-41-1	50 mg/kg	100 mg/kg
Vinyl Chloride	75-01-4	0.1 mg/kg	/
2-Butanone Oxime	96-29-7	Each 1 mg/kg	
2-Butoxyethanol	111-76-2		
4-Vinylcyclohexene (VCH)	100-40-3		
1,3-Butadiene	106-99-0		
Epichlorohydrin	106-89-8		
Ethyleneimine	151-56-4		
Propyleneimine	75-55-8		
Triethylamine	121-44-8	2 mg/kg	
1,3,5-Trimethylbenzene	108-67-8	Usage Ban (Each 5 mg/kg)	
Hexachlorobutadiene (HCBD)	87-68-3		
2-(2-Methoxyethoxy)ethanol	111-77-3	Usage Ban (Each 10 mg/kg)	
Phenol	108-95-2		
1,1-Dichloroethylene	75-35-4	Each 10 mg/kg	
Acetaldehyde	75-07-0		
Cyclohexanone	108-94-1		
2-Phenyl-2-propanol	617-94-7	Usage Ban (Each 20 mg/kg)	
Dimethyl Sulfoxide (DMSO)	67-68-5		
2-Ethylhexanol	104-76-7	Each 50 mg/kg	
4-Phenylcyclohexene	4994-16-5		
1,3-Dimethylpyrazole	694-48-4		
Acetophenone	98-86-2		
Benzyl Benzoate	120-51-4		
1,1,1-Trichloroethane	71-55-6	Each 100 mg/kg	
1,1,2-Trichloroethane	79-00-5		
1,2,3-Trichloropropane	96-18-4		

1,1,1,2-Tetrachloroethane	630-20-6	Each 100 mg/kg	/
1,1,2,2-Tetrachloroethane	79-34-5		
Carbon Disulfide	75-15-0		
Carbon Tetrachloride	56-23-5		
Methylethylketone (MEK)	78-93-3		
Pentachloroethane	76-01-7		
Formamide	75-12-7	200 mg/kg	
2-Phenoxyethanol	122-99-6	400 mg/kg	
Cyclohexane	110-82-7	Each 1000 mg/kg	
Tetrahydrofuran (THF)	109-99-9		

Category: Miscellaneous Restricted Substances

Dioxins and Furans

PRSL Test Method	US EPA 8290

Group 1

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	Group 1: Sum 0.1 µg/kg	/
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4		
2,3,7,8-Tetrachlorodibenzofuran	51207-31-9		
2,3,4,7,8-Pentachlorodibenzofuran (2,3,4,7,8-PeCDF)	57117-31-4		

Group 2

1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227-28-6	Group 1 & 2: Sum 1 µg/kg	/
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3		
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7		
1,2,3,7,8-Pentachlorodibenzofuran	57117-41-6		
1,2,3,4,7,8-Hexachlorodibenzofuran	70648-26-9		
1,2,3,7,8,9-Hexachlorodibenzofuran	72918-21-9		
1,2,3,6,7,8-Hexachlorodibenzofuran	57117-44-9		
2,3,4,6,7,8-Hexachlorodibenzofuran	60851-34-5		

Group 3

1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822-46-9	Group 1, 2 & 3: Sum 1 µg/kg	/
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268-87-9		
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562-39-4		
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673-89-7		
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001-02-0		

Group 4

2,3,7,8-Tetrabromodibenzo-p-dioxin	50585-41-6	Group 4: Sum 0.1 µg/kg	/
1,2,3,7,8-Pentabromodibenzo-p-dioxin	109333-34-8		
2,3,7,8-Tetrabromodibenzofuran	67733-57-7		
2,3,4,7,8-Pentabromodibenzofuran	131166-92-2		

Group 5

1,2,3,4,7,8-Hexabromodibenzo-p-dioxin	110999-44-5	Group 4 & 5: Sum 1 µg/kg	/
1,2,3,7,8,9-Hexabromodibenzo-p-dioxin	110999-46-7		
1,2,3,6,7,8-Hexabromodibenzo-p-dioxin	110999-45-6		
1,2,3,7,8-Pentabromodibenzofuran	107555-93-1		

Asbestos

PRSL Test Method	Microscopic Examination; Minimum Magnification 1-250, Polarized Light Filter Attached; Ratio of Fiber Length to Diameter is at 3:1

Restricted Substance Name / Group	**CAS #**	**PRSL Limit**	**MRSL Limit**
Actinolite	77536-66-4	Usage Ban (Each 1 %)	/
Amosite	12172-73-5		
Anthophyllite	77536-67-5		
Chrysotile	12001-29-5		
Crocidolite	12001-28-4		
Tremolite	77536-68-6		

Fluorinated Greenhouse Gases

PRSL Test Method	HS-GC-MS Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Ozone Depleting Substances – Class I and II	Various	Usage Ban (Each 0.1 mg/kg)	/
Sulphur Hexafluoride	2551-62-4		
Hydrofluorocarbons (HFCs)			
Trifluoromethane (HFC-23)	75-46-7	Usage Ban (Each 0.1 mg/kg)	/
Difluoromethane (HFC-32)	75-10-5		
Fluoromethane (HFC-41)	593-53-3		
1,1,1,2,2,3,4,5,5,5-Decafluoropentane (HFC-43-10mee)	138495-42-8		
Pentafluoroethane (HFC-125)	354-33-6		
1,1,2,2-Tetrafluoroethane (HFC-134)	359-35-3		
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2		
1,1,2-Trifluoroethane (HFC-143)	430-66-0		
1,1,1-Trifluoroethane (HFC-143a)	420-46-2		
1,1-Difluoroethane (HFC-152a)	75-37-6		
1,1,1,2,3,3,3-Heptafluoropropane (HFC-227ea)	431-89-0		
1,1,1,2,2,3-Hexafluoropropane (HFC-236cb)	677-56-5		
1,1,1,2,3,3-Hexafluoropropane (HFC-236ea)	431-63-0		
1,1,1,3,3,3-Hexafluoropropane (HFC-236fa)	690-39-1		
1,1,2,2,3-Pentafluoropropane (HFC-245ca)	679-86-7		
1,1,1,3,3-Pentafluoropropane (HFC-245fa)	460-73-1		
1,1,1,3,3-Pentafluorobutane (HFC-365mfc)	406-58-6		

Perfluorocarbons (PFCs)			
Perfluoromethane	75-73-0	Usage Ban (Each 0.1 mg/kg)	/
Perfluoroethane	76-16-4		
Perfluoropropane	76-19-7		
Perfluorobutane	355-25-9		
Perfluoropentane	678-26-2		
Perfluorohexane	355-42-0		
Perfluorocyclobutane	115-25-3		

Climate Relevant Gases

Restricted Substance Name / Group	RSL Test Method	PRSL Limit
See List Below	HS-GC-MS Analysis	Usage Ban (Each 0.1 mg/kg)

$CFCl_3$	C_2FCl_5	C_2HF_4Br	C_3H_5F2Br	CHF_2Cl	$C_3H_2FCl_5$
C_3F_7Cl	$C_3HF_2Br_5$	C_2HF_4Cl	$C_2HF_3Cl_2$	$C_3H_2F_5Cl$	$C_3F_5Cl_3$
$C_3H_2F_4Br_2$	$C_3HF_3Cl_4$	$C_2H_2F_3Cl$	$C_3H_3F_4Cl$	CH_2FBr	$C_2H_4Br_2$
CF_3Br	$C_3HF_2Cl_5$	$C_3H_5FCl_2$	$C_2H_3FBr_2$	$C_3H_2F_2Br_4$	$C_2HF_2Cl_3$
$C_3HF_5Cl_2$	C_2F_2Cl	C_3HF_6Br	$C_3H_4FBr_3$	C_3HFCl_6	CHF_2Br
C_3FCl_7	$C_3H_3F_3Br_2$	CH_2FCl	C_2F_5Cl	$C_2H_2F_3Br$	$C_3H_3F_2Cl_3$
$CHFCl_2$	$C_2H_3FCl_2$	$C_3F_2Cl_6$	$C_3HF_5Br_2$	$C_3H_4F_2Cl_2$	CF_2BrCl
C_3HF_6Cl	CH_3Br	$C_3H_3F_2Br_3$	C_3H_6FCl	CF_2Cl_2	$C_2F_2Cl_4$
$C_2H_2FBr_3$	C_3H_6FBr	$C_3F_6Cl_2$	C_2H_4FBr	CCl_4	$C_3H_2F_5Br$
$C_2H_2FCl_3$	C_2H_4FCl	C_3HFBr_6	CF_3Cl	$C_3H_5FBr_2$	C_3H_7Br
CH_2BrCl	C_2HFBr_4	$C_3H_5F_2Cl$	$C_2HF_3Br_2$	$C_3H_2F_4Cl_2$	$C_3H_3F_4Br$
$C_2H_3F_2Br$	$C_3H_2F_3Br_3$	CH_3Cl	$C_3H_3F_3Cl_2$	C_2H_5Br	$C_2H_3F_2Cl$
$C_3H_4F_2Br_2$	CF_2ClBr	$C_3H_2F_2Cl_4$	$C_3HF_4Br_3$	$C_2F_4Cl_2$	$C_2H_2F_2Br_2$
$C_3F_3Cl_5$	$C_3H_3FBr_4$	$C_2H_3Cl_3$	$C_3H_3FCl_4$	$C_3H_4FCl_3$	$C_2F_4Br_2$
$C_2HF_2Br_3$	$C_3H_4F_3Br$	$C_3F_4Cl_4$	$C_3H_2F_3Cl_3$	$C_2H_2F_2Cl_2$	$C_2F_3Cl_3$
$C_3HF_3Br_4$	$C_3HF_4Cl_3$	CBr_2F_2	$C_3H_2FBr_5$	C_2HFCl_4	$CHFBr_2$

Other Miscellaneous Restricted Substances

PRSL Test Method	Solvent Extraction, GC-MS/ LC-MS/ HS-GC-MS Analysis; Acid Digestion, ICP-MS Analysis
MRSL Test Method	Solvent Extraction, LC-MSMS/ LC-DAD Analysis

Restricted Substance Name / Group	CAS #	PRSL Limit	MRSL Limit
Thiourea	62-56-6	Usage Ban (5 mg/kg)	Each 1000 mg/kg
Sodium Perborate	11138-47-9; 15120-21-5; 13517-20-9; 125022-34-6; 90568-23-3	Each 100 mg/kg	
Sodium Peroxometaborate	7632-04-4		
Sodium Tetrahydroborate	16940-66-2		
Diazene-1,2-dicarboxamide (ADCA)	123-77-3	1000 mg/kg	
Titanium Dioxide	13463-67-7	TiO_2 Particles with Diameter ≤10 μm: Usage Ban (1 %)	TiO_2 Particles with Diameter ≤10 μm: Usage Ban (1 %)
2-Nitropropane	79-46-9	Each 1 mg/kg	Ink: Usage Ban
1-Nitropropane	108-03-2		/
2-Chloroethanol	107-07-3		
Dimethyl Sulphate (DMS)	77-78-1		
Hydrofluoric Acid	7664-39-3		
Methyl Chloride	74-87-3		
4-Tert-butyltoluene	98-51-1	Usage Ban (Each 1 mg/kg)	
Acrolein	107-02-8		
Colophony (Rosin)	8050-09-7		
Hexane	110-54-3		
Limonene: d-Limonene; l-Limonene	138-86-3: 5989-27-5; 5989-54-8		
N-Phenyl-2-naphthylamine	135-88-6		
Glyoxal	107-22-2	5 mg/kg	
2,4-Dinitrotoluene (DNT)	121-14-2	Usage Ban (10 mg/kg)	

Ammonia	7664-41-7	Each 10 mg/kg	/
Benzyl Alcohol	100-51-6		
Cyclohexanol	108-93-0		
Diethanolamine	111-42-2		
Formic Acid	64-18-6		
Hexamethylenetetramine	100-97-0		
Methanol	67-56-1		
Tributyl Phosphate	126-73-8		
Triisobutyl Phosphate	126-71-6		
Trimethylamine	75-50-3		
4-Hydroxy-4-methylpentan-2-one	123-42-2	Each 20 mg/kg	
N-Cyclohexyl-2-pyrrolidone	6837-24-7		
N-Methylaniline	100-61-8		
2-Ethylhexyl Dihydrogen Phosphate	1070-03-7	Each 50 mg/kg	
2-Ethylhexyl Diphenyl Phosphate	1241-94-7		
Bis(2-ethylhexyl) Hydrogen Phosphate	298-07-7		
Bis(2-ethylhexyl) Maleate	142-16-5		
Bis(2-ethylhexyl) Phosphonate	3658-48-8		
Diisooctyl Hydrogen Phosphate	27215-10-7		
Hexamethylenediamine	124-09-4		
Isooctyl Dihydrogen Phosphate	26403-12-3		
Phosphoric Acid	12645-31-7		
Triethanolamine	102-71-6		
Tris(2-ethylhexyl) Phosphate	78-42-2		
Tris(2-ethylhexyl) Phosphite	301-13-3		
2-(2H-Benzotriazol-2-yl)-p-cresol	2440-22-4	Each 100 mg/kg	
Acetic Acid	64-19-7		
Bis(2-ethylhexyl) Fumarate	141-02-6		
Michler’s Ketone	90-94-8		
Acids Generated from Chromium Trioxide and Their Oligomers	7738-94-5/ 13530-68-2	Usage Ban (1000 mg/kg)	

1,3-Dichloro-2-propanol (1,3-DCP)	96-23-1	1000 mg/kg	/
2,4,6-Tri-tert-butylphenol (2,4,6-TTBP)	732-26-3	3000 mg/kg	
Pentachlorothiophenol (PCTP)	133-49-3	Usage Ban (10000 mg/kg)	
Potassium Permanganate	7722-64-7	Usage Ban	

4. Implementation Guide

This Implementation Guide is intended to help users implement the RSL Policy.
Topics covered in this section:

4.1 Field of Application
4.2 Recommendation for RSL policy implementation
4.3 Testing

4.1 Field of Application

The following tables describe the various chemical categories and identifies some (but not all) of raw materials, component parts, chemicals and other conditions where the presence of certain chemicals can be expected.

Azo Dyes

What are Azo Dyes?
Azo dyes and pigments are colourants that incorporate one or several azo groups (-N=N-) bond with aromatic compounds. Thousands of azo dyes exist, but only those which degrade to form listed amines are restricted.

Where is it used?
Dyeing textiles, prints and leather products

Recommendation:
Use dyestuffs, pigments and textile auxiliaries from reputable manufacturers only. One useful source is from Ecological Toxicological Association of Dyestuffs (ETAD) (www.etad.com)

High risk product line: All fibers, leather, prints, plastics

Disperse Dyes

What are Disperse Dyes?
Disperse dyes are a class of water-soluble dyes that penetrate that fiber system of synthetic or manufactured fibers and are held in place by physical forces without forming chemical bonds. Restricted disperse dyes are suspected of causing allergic reactions.

Recommendation:
Use dyestuff from internationally recognized suppliers. Orange 37/76 is the most common failure and is commonly found in dark colours

High risk product line: Synthetic fiber

Heavy Metals
Where can Cadmium be found? Pigments, metal coatings, plastics, especially PVC (as a heat stabilizer) **High risk product line:** Screen print or heat transfer inks
Where can Antimony be found? 1. Catalyst in polymerization 2. Flame retardants, fixing agents and can be found in pigments **High risk product line:** Leather, all fibers, metal parts, products with flame resistant
Where can Chromium (VI) be found? Leather or suede tanned with chromium salts. Chromium compounds are used to tan leather. After tanning a complete reduction process is required to ensure any residual chromium ions are converted from Chromium (VI) – carcinogenic form to Chromium (III) – inert form. **High risk product line:** Leather
Where can Lead be found? 1. Stabilizers for plastics 2. Pigments for paints on metals and leather dyeing, e.g., surface paints on zippers, buttons, leather 3. Inks, especially screen print inks **Recommendation:** High risk colour includes bright, metallic, fluorescent colour. Red, yellow and orange colours are also high risk. **High risk product line:** Leather, metal parts, screening print label, heat transfer label, inks
Where can Nickel be found? 1. Plating of alloys for the corrosion resistance and hardness 2. Pigments and as fixing agents **High risk product line:** Metal parts
Where can Mercury be found? 1. Present in pesticides 2. Paints for zippers and buttons **High risk product line:** Leather, all fibers, metal parts.
Arsenic: Preservatives, pesticides and defoliants for cotton **Cobalt:** As pigments or used in metal alloys **Copper:** Antimicrobial protective fabrics and electroplating **Barium:** Pigments to give green colours **Selenium:** Pigments to give red colours **High risk product line:** Leather, all fibers, metal parts

Organotins

What are Organotins?
Organotins are a class of chemicals combining tin and organics such as butyl and phenyl groups.

Where is it used?
1. Organotins are predominantly found in the environment as antifoulants in marine paints.
2. biocides (e.g., antibacterials)
3. Catalysts in plastic, glue production, and PU
4. Heat stabilizer in plastics (high risk is low temperature melting plastics), especially in PVC

High risk product line: Coated leather, plastics, coatings, HTL, PU coated material, paints, ink

Phthalates

What are Phthalates?
Esters of orth-phthalic acid or “phthalates” are a class of organic compounds commonly added to plastics to increase flexibility. They are sometimes used to facilitate molding of plastic by decreasing its melting temperature.

Where is it used?
1. Softener (plasticizer) in plastics, print pastes, adhesives
2. Soft PVC plastic

High risk product line: Prints, plastics, heat transfer label, adhesives,, coating

Formaldehyde

What is Formaldehyde?
- This chemical is used as a preservative, fungicide and disinfectant, and is found in many chemicals and products
- it is volatile, colourless and present in small amounts in atmosphere, tobacco smoke, glue and air pollution

Where is it used?
1. Pre-shrinkage, easy-care and pre-wrinkle treatment, and for fixation or preservation of dyes and prints
2. Contamination through contacting with other sources, such as garment, smoking, inks
3. Biocide and reactive component in easy care finishing textile auxiliaries
4. Reactive polymers as cross linking unit
5. Pigment print binder
6. Adhesive

Recommendation:
Use formaldehyde free resin or low formaldehyde resins and fully cure according to chemical supplier specifications to remove formaldehyde.
Heat transfer adhesive such as those used in flocks require a catalyst. Use formaldehyde free catalyst based adhesives

High risk product line: All fibers, prints, plastics and rubber, leather and paper

Dimethyl Fumarate (DMFu)

What is Dimethyl Fumarate (DMFu)?
Biocide to kill molds in leather during storage and transportation in a humid climate. It is usually found in sachets with function of anti-moisture/molding during shipment and it is strongly recommended avoid using this kind of sachets during shipment.

High risk product line: Leather, sachets for anti-moisture/molding

Dimethyl Formamide (DMFa)

What is Dimethyl Formamide (DMFa)?
DMFa is a solvent used in plastics, rubber, and polyurethane (PU) coating. It has a strong smell in the finished product. Water-based PU does not contain DMF and is therefore preferable.

High risk product line: Plastic, PU coating

APEOs/ APs

What are APEOs/ APs?
APEOs are non-ionic surfactants including NPEOs, OPEOs, NP and OP. NPEOs and OPEOs degrade into NP and OP, respectively.

Where is it used?
Emulsifier, household cleaning, disinfection agents, industrial washing agent, textile / leather finishing additives, detergents, sourcing agents, wetting agents, softeners, dispersing agents for dyes and prints, degreasing agents for leather, leather finishing, de-gumming for silk production, dye and pigment preparations.

Recommendation:
1. Carefully review SDS and maintain comprehensive database for SDS;
2. Further confirm with high risk chemical / auxiliaries supplier;
3. Any doubt, ask supplier to provide test report;
4. All processes can contain APEO, so dye mills and processors must check all dyes and chemical auxiliaries with their chemical suppliers.

High risk product line: Textile, leather and plastic, silk, cotton, adhesive, sticker

PAHs

What are PAHs?
PAHs are natural components of crude oil and they are a common residue from oil refining. PAHS have a characteristic smell similar to the smell of car tires or asphalt.

Where is it used?
1. Oil residues containing PAHs are added in rubber and plastics as a softener or extender. Therefore, PAHS are risky in rubber, plastics, lacquers and coating.
2. Printing pastes of screen prints.
3. Impurities in Carbon Black.
4. Soft plastic e.g. rubber

High risk product line: Carbon Black prints

Others:

Chemical	Field of Application	Product line
Perfluorinated Compounds (PFCs/ PFAS)	Impregnating agent on textiles, e.g., water, soil, oil repellents	Materials with water, soil, or oil-repellent function
Phenols	1. Prevent mold when growing cotton and when storing/transporting fabrics 2. Preservative in print pastes	All fibers, prints, plastics, and rubber, leather and paper
Chlorinated Organic Carriers	Auxiliaries in the dyeing of textile	Synthetic fabric and blend fabric
PCBs	1. Pesticides 2. Softeners, carriers and flame retardants	All fibers, natural leather, plastic
Flame Retardants	Decrease the flammability of the product, e.g., lowering the energy (heat) of the flame	Products with flame resistant purpose
Bisphenol A (BPA)	Bisphenol A (BPA) occurs in its pure form as white flakes with a faint phenol-like smell. It is used in the production of epoxy resins and polycarbonate plastics	PVC, thermal paper, product with flame resistant function
Chloroparaffins	Chloroparaffins are hydrocarbons with a straight carbon chain. They can be used as : flame retardants, leather greasing agent, fat liquoring of leather	Product with flame resistant function, leather
Isocyanate	Isocyanates are used in the production of polyurethane plastics and foams. When testing PU for Isocyanates it is important to follow the standard method, since certain conditions result in false positives.	Polyurethane

4.2 Recommendation of RSL policy implementation

Step 1: Internal capability building ● Delegate responsibility to a department or staff members ● Develop and publish your own company RSL policy including steps for implementation. Adoption of the ADRSL is recommended. ● Gain the commitment of internal stakeholders and train internal staff ● Track emerging legislation and voluntary standard ● Report RSL test result to management on a regular basis	**Step 2: Communicate to your supplier** ● Send your latest RSL policy to your suppliers and only do business with RSL compliant companies ● Learn your supplier's production process and product chemistry. Exchange RSL knowledge with your suppliers ● Prepare frequently asked questions from suppliers and share the answer among them ● Require chemical suppliers to provide safety data sheets (SDS) for chemicals including auxiliaries, dyes, etc. AFIRM website has a good introduction about how to review SDS (http://www.afirm-group.com/) ● Create an evaluation system to track your supplier compliance, such as score card. Use the result for future sourcing decisions.
Step 3: Testing ● Identify and communicate your needs to the testing laboratories. It is recommended to follow ADRSL for testing and Bureau Veritas (BV) is the AD nominated laboratory ● Identify which chemicals to test based on your requirement. Chemical testing should target upstream materials and those materials that pose the highest risk ● Determine the frequency of testing for restricted substances in finished products to address risk ● Develop a system for storing testing data ● Identify procedure for handling RSL failure	**Step 4: Continuous improvement** ● Track updates and trends in legislation related to restricted substances in apparel and shoe manufacturing ● Exchange knowledge through industry initiatives ● Identify most stringent requirements and adopt them as your own ● Based on test result, evaluate the risk on your product and discuss with management team for appropriate action to address risk. Example of high risk materials are leather, TPU, metal, screen print label; high risk colours include bright and fluorescent colours

4.3 Testing

Suppliers are responsible to verify all material supplied to Avery Dennison is in compliance with the ADRSL. All the costs associated with product testing shall be the responsibility of the suppliers. Based on the ADRSL, the following Test Matrix contains test packages of concerned restricted substances related to different material types:

A Adhesive, HTL release
B Ink, dyes, coating, foil
C Leather (natural)
D Leather (synthetic)
E Metal
F Paper
G Plastic, silicone, heat seal backing
H Textile (natural)
I Textile (synthetic)
J Textile (blend)
K Packaging - all material

The test matrix is not intended to replace the RSL requirement but is meant to provide guidance to our suppliers to assist in their internal chemical management programs.

Avery Dennison may randomly select materials for testing. Any failure discovered will be brought to the supplier's attention and it will be supplier's responsibility to investigate the root cause of a failure and implement a corrective action. **Suppliers will be held liable for any costs associated with a product failure.**

The table below provides general guidance on product testing for selected product/ material types. Actual testing performed by suppliers should be based on their own assessment of chemical risks.

Finished Product	**Test Package**
HTL – heat transfer label	B
PFL – printed fabric label	B + H/ I/ J
WL – woven label	H/ I/ J
Packaging or packaging material/component (eg: paper bag, polybag, hangtag, sticker)	K
RFID antenna and chip – antenna and chip in radio frequency identification label	RoHS test + test package(s) for base material

4.3.1 Test Matrix

Chemical formulations such as cleaners, adhesives, paints, inks, detergents, dyes, colourants, auxiliaries, coatings and finishing agents should be assessed according to ZDHC MRSL requirements.

Restricted Substances	Non-packaging										Packaging
	A	B	C	D	E	F	G	H	I	J	K
	Adhesive, HTL release	Ink, dyes, coating, foil	Leather (natural)	Leather (synthetic)	Metal	Paper	Plastic, silicone, heat seal backing	Textile (natural)	Textile (synthetic)	Textile (blend) *1	All material
Azo Dyes ^		●	●			●		●	●	●	●
APs, APEOs	●	●	●	●		●	●	●	●	●	●
BHT											●
Chlorinated Organic Carriers		●									
Chlorinated Phenol	●	●	●	●		●		●	● *2	●	●
Dimethyl Formamide		● *3		●			● *3				
Disperse Dyes, Carcinogenic Dyes and Other Restricted Dyes ^		●	●	●					●	●	
Formaldehyde	●	●	●	●		●		●	●	●	●
Total Heavy Metals ^	●	●	●	●	●	●	●				
Additional Total Heavy Metals ^	●	●									
Chromium VI			●								
Nickel Release					● *4						
Extractable Heavy Metals ^	●	●	●	●		●	●	●	●	●	●
Organotins	●	●	●	●		●	●	●	●	●	●
PFCs/ PFAS	● *5	● *5									● *5
pH			●	●				●	●	●	
Phthalates	●	●		●			●				● *6
PAHs ^	●	●		●			●				
SCCPs & MCCPs	●	●	●	●			●				
VOCs	●	●									
Heavy Metals in Packaging and Packaging Component (94/62/EC, TPCH)											●

*1: material consists of both natural and synthetic textiles
*2: apply on polyester material only
*3: apply on PU/ TPU material only
*4: apply on component with prolonged contact with skin only
*5: apply on material with fluorinated finish only
*6: apply on plasticized material only
^ : these tests are colour-related

5. Frequently Asked Questions

1. What is Avery Dennison's policy regarding compliance with its Restricted Substances List?

Avery Dennison's objective is to ensure that all products meet regulatory requirements as well as customers' expectations, including adherence to our customers' Restricted Substances Lists (RSL). In order to meet this objective, Avery Dennison's policy is to conduct business only with those suppliers who are committed to meeting the requirements of ADRSL.

2. How was ADRSL developed and updated?

The ADRSL is updated periodically to reflect changes in worldwide regulations and additional requirements from major customers. PRSL was developed based on the RSL from the American Apparel and Footwear Association (AAFA), AFIRM, and in consultation with the Restricted Substances Lists of our major retail and brand customers. MRSL was developed in accordance with ZDHC MRSL.

3. What substances are included in the PRSL?

The PRSL includes those materials, chemicals, and substances that are restricted or banned in finished apparel and footwear products due to a regulation or law, industrial standard, or brand specific requirement. In each case, the RSL identifies the most restrictive regulation. In addition, the RSL includes bans on chemicals by customers based on proactive measures to address risk associated with toxic chemicals.

4. What substances are included in the MRSL?

Avery Dennison's MRSL adopts the MRSL developed by ZDHC. For more information, please refer to ZDHC website at: https://mrsl-30.roadmaptozero.com/

5. Does meeting Oeko-Tex standards imply compliance with ADRSL?

No. The Oeko-Tex standard contains analytical tests for specified harmful substances and gives limiting values based on scientific considerations to address health risks. In addition to addressing risks to humans, the ADRSL addresses risks to the environment and is based on regulatory limits which in turn are based on toxicological studies.

6. What packaging is addressed in the RSL?

The packaging that is addressed in the RSL includes all packaging accompanying products shipped to customers. It does not include packaging of raw materials and other goods used on products shipped to Avery Dennison's facilities or to its suppliers' facilities.

7. Is certification of compliance based on a one-time test result sufficient?

No. Suppliers need to understand that Avery Dennison is not seeking a "snap shot" in time. Instead Avery Dennison wants assurance and must be able to demonstrate to its customers that we and our suppliers have a systematic approach to ensuring compliance with customers' RSL for all of our products.

8. Are the RSL requirements intended to protect human health only and therefore, if a product does not come in touch with human skin, it is not subject to the RSL requirements?

No. The objective of the RSL is to protect human health and the environment. As far as environmental protection, Avery Dennison's goal and that of its customers is to protect the environment from products once they become waste, i.e., metals leaking into groundwater.

9. Is it the responsibility of the user or the supplier to check final product compliance with the RSL?

It is the responsibility of the supplier to ensure that all products supplied to Avery Dennison or its customers are in compliance with all local regulations and its RSL. Avery Dennison's assessment of the final product is only for verification and to ascertain that the suppliers' due diligence measures are effective.

10. Does the REACH requirement only apply to finished products, and not to packaging products?

No. All products, including packaging and packaging components, need to comply with REACH and with SVHC concentration below 0.1% (w/w). Suppliers need to comply with the latest SVHC update.

11. Do suppliers need to test after raw materials changed?

Yes. We request all suppliers to inform Avery Dennison of any change in raw materials. We may request suppliers to provide test reports showing compliance to ADRSL after a material change.

12. What is the update frequency of ADRSL?

We intend to update ADRSL once a year or as needed. The review will include, but not limited to, restricted substances list, limit and testing matrix.

13. Do we need to comply with ADRSL when the end product is a toy or electronics/electrical products?

Yes. In the case that products are intended for industries other than Apparel and Footwear, for example, toy, electronics, electrical, automotives, food, etc, additional requirements to the respective industrial related legislation and buyer requirements may have to be fulfilled. Please consult with AD colleagues for detailed requirements.

14. Is component testing approved?

Yes, for AD, component testing is approved so you can decide to have components tested and not test finished products. Different customers may have different views so please check with Compliance Team, Preferred Lab when performing testing on customers' requests.

For additional information, please contact a compliance team member:

AS Compliance Team
email : rbis.ww.productcompliance@averydennison.com

6. Change Log

Restricted Substance Name / Group	CAS#	Type of Change
Azo Dyes		
Aniline	62-53-3	Add MRSL limit, 500 mg/kg
4-Ethoxyaniline	156-43-4	Newly added, PRSL limit Usage Ban (20 mg/kg)
2,5-Diaminotoluene	95-70-5	Newly added, PRSL limit Usage Ban (20 mg/kg)
3,3-Diaminobenzidine	91-95-2	Newly added, PRSL limit Usage Ban (20 mg/kg)
Alkylphenols (APs) and Alkylphenol Ethoxylates (APEOs)		
Nonylphenol Ethoxylates (NPEOs)	Various	MRSL limit change from 500 mg/kg to 250 mg/kg
Nonylphenol Ethoxylates (NPEOs)	Various	MRSL limit change from 500 mg/kg to 250 mg/kg
Nonylphenol (NP)	Various	MRSL limit change from 250 mg/kg to 100 mg/kg
Octylphenol (OP)	Various	MRSL limit change from 250 mg/kg to 100 mg/kg
Chlorinated Organic Carriers (COCs)		
Trichlorotoluenes	Various	MRSL limit change from 5 mg/kg to 10 mg/kg
Tetrachlorotoluenes	Various	MRSL limit change from 5 mg/kg to 10 mg/kg
Benzyl Chloride	100-44-7	MRSL limit change from Dye: 100 mg/kg; Others: 5 mg/kg to Dye: 100 mg/kg; Others: 50 mg/kg
Chlorinated Phenols		
Pentachlorophenol (PCP)	87-86-5	MRSL limit change from 20 mg/kg to 5 mg/kg
Tetrachlorophenols (TeCP): 2,3,4,5-Tetrachlorophenol; 2,3,4,6-Tetrachlorophenol; 2,3,5,6-Tetrachlorophenol	25167-83-3: 4901-51-3; 58-90-2; 935-95-5	MRSL limit change from Sum 20 mg/kg to Sum 15 mg/kg
Dimethyl Formamide (DMFa)		
Dimethyl Formamide (DMFa)	68-12-2	Add MRSL limit, 1000 mg/kg
Dimethyl Fumarate (DMFu)		
Dimethyl Fumarate (DMFu)	624-49-7	Add MRSL limit, 10 mg/kg
Disperse Dyes, Carcinogenic Dyes and Other Restricted Dyes		
Basic Green 4: Leucomalachite Green	129-73-7	Newly added, PRSL limit Usage Ban (15 mg/kg); MRSL limit 250 mg/kg
Basic Yellow 2	2465-27-2	Newly added, PRSL limit Usage Ban (15 mg/kg)
Solvent Yellow 34	492-80-8	Newly added, PRSL limit Usage Ban (15 mg/kg)

Flame Retardants		
Tri-o-cresyl Phosphate (TOCP)	78-30-8	Add MRSL limit, 250 mg/kg
Trixylyl Phosphate (TXP)	25155-23-1	Add MRSL limit, 250 mg/kg
Trimethyl Phosphate (TMP)	512-56-1	PRSL limit change from 25 mg/kg to 5 mg/kg, Add MRSL limit, 250 mg/kg
Short-chain Chlorinated Paraffins (SCCPs) (C10 to C13)	85535-84-8	MRSL limit change from 50 mg/kg to 250 mg/kg
Medium-chain Chlorinated Paraffins (MCCPs) (C14 to C17)	85535-85-9	MRSL limit change from 500 mg/kg to 250 mg/kg
Glycols		
2-Methoxylpropanol	1589-47-5	Add MRSL limit, 50 mg/kg
Soluble Heavy Metals		
Soluble Antimony (Sb)	7440-36-0	PRSL limit change from 60 mg/kg to 30 mg/kg
Mineral Oils in Printing Ink for Packaging		
MOAH	/	Newly added, PRSL limit 1000 mg/kg; 3-7 Rings: 1 mg/kg
MOSH	/	Newly added, PRSL limit 1000 mg/kg
Perfluorinated Compounds (PFCs/ PFAS)		
Total Organic Fluorine	Various	Newly added, PRSL limit 10 mg/kg
Didecyldimethyl Ammonium Perfluorooctane Sulfonate (PFOS-N(C10H21)2(CH3)2)	251099-16-8	Add MRSL limit, 2 mg/kg
Perfluorohexanoic Acid (PFHxA)	307-24-4	Add MRSL limit, 0.025 mg/kg
1H,1H,2H,2H-Perfluoro-1-hexanol (4:2 FTOH)	2043-47-2	Add MRSL limit, 1 mg/kg
1H,1H,2H,2H-Perfluoro-1-octanol (6:2 FTOH)	647-42-7	Add MRSL limit, 1 mg/kg
1H,1H,2H,2H-Perfluoro-1-dodecanol (10:2 FTOH)	865-86-1	Add MRSL limit, 1 mg/kg
2H,2H-Perfluorodecanoic Acid (H2PFDA)	27854-31-5/ 882489-14-7	Add MRSL limit, 1 mg/kg
Perfluorobutanoic Acid (PFBA)	375-22-4	Add MRSL limit, 1 mg/kg
Perfluorodecanoic Acid (PFDA)	335-76-2	Add MRSL limit, 1 mg/kg
Perfluorobutanesulfonic Acid (PFBS)	29420-49-3/ 375-73-5/ 59933-66-3	Add MRSL limit, 1 mg/kg

Perfluorodecanesulfonic Acid (PFDS)	335-77-3/ 126105-34-8	Add MRSL limit, 1 mg/kg
Perfluorohexanesulfonic Acid (PFHxS)	355-46-4	Add MRSL limit, 1 mg/kg
Perfluorohexanesulfonic Acid, Potassium Salt (PFHxS-K)	3871-99-6	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
Perfluorohexanesulfonic Acid, Lithium Salt (PFHxS-Li)	55120-77-9	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
Perfluorohexanesulfonic Acid, Ammonium Salt (PFHxS-NH4)	68259-08-5	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
Perfluorohexanesulfonic Acid, Sodium Salt (PFHxS-Na)	82382-12-5	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
N-Methylperfluoro-1-hexanesulfonamide (N-Me-FHxSA)	68259-15-4	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
Perfluorohexanesulfonamide (PFHxSA)	41997-13-1	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
1H,1H,2H,2H-Perfluorododecyl Iodide (10:2 FTI)	2043-54-1	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
1H,1H,2H,2H-Perfluorotetradecyl Iodide (12:2 FTI)	30046-31-2	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
1H,1H,2H,2H-Perfluorododecyl Methacrylate (10:2 FTMA)	2144-54-9	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
1H,1H,2H,2H-Perfluoro-1-tetradecanol (12:2 FTOH)	39239-77-5	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
1H,1H,2H,2H-Perfluorododecane sulfonic Acid (10:2 FTS)	120226-60-0	Newly added, PRSL limit Usage Ban (1 µg/m2; 0.01 mg/kg)
Pesticides		
Dichlorophene	97-23-4	PRSL limit change from Usage Ban (1 mg/kg) to Usage Ban (0.5 mg/kg)
Silafluofen	105024-66-6	Newly added, PRSL limit Usage Ban (0.5 mg/kg)
Phthalates		
Diisohexyl Phthalate (DIHxP)	71850-09-4	Add MRSL limit, 250 mg/kg
n-Pentyl-iso-pentyl Phthalate (PiPP)	776297-69-9	Add MRSL limit, 250 mg/kg
Siloxanes		
Octamethylcyclotetrasiloxane (D4)	556-67-2	Newly added, PRSL limit 1000 mg/kg; MRSL limit 1000 mg/kg
Decamethylcyclopentasiloxane (D5)	541-02-6	Newly added, PRSL limit 1000 mg/kg; MRSL limit 1000 mg/kg

Dodecamethylcyclohexasiloxane (D6)	540-97-6	Newly added, PRSL limit 1000 mg/kg; MRSL limit 1000 mg/kg
Volatile Organic Compounds (VOCs)		
N-Methyl-2-pyrrolidone (NMP)	872-50-4	MRSL limit change from Ink: Usage Ban to Ink: Usage Ban; Others: 1000 mg/kg
Toluene	108-88-3	MRSL limit change from Ink: Usage Ban; Cleaning Agent: 5000 mg/kg to Ink: Usage Ban; Cleaning Agent: 5000 mg/kg; Others: 500 mg/kg
N,N-Dimethylacetamide (DMAC)	127-19-5	Add MRSL limit, 1000 mg/kg
N-Ethyl-2-pyrrolidone (NEP)	2687-91-4	Add MRSL limit, 1000 mg/kg
Miscellaneous Restricted Substances		
Sodium Perborate	11138-47-9; 15120-21-5; 13517-20-9; 90568-23-3; 125022-34-6	Add MRSL limit, 1000 mg/kg
Sodium Peroxometaborate	7632-04-4	Add MRSL limit, 1000 mg/kg
Sodium Tetrahydroborate	16940-66-2	Newly added, PRSL limit 100 mg/kg; MRSL limit 1000 mg/kg
Diazene-1,2-dicarboxamide (ADCA)	123-77-3	Newly added, PRSL limit 1000 mg/kg; MRSL limit 1000 mg/kg
Titanium Dioxide	13463-67-7	Newly added, PRSL & MRSL limit: TiO_2 Particles with Diameter ≤10 µm: Usage Ban (1 %)

Test Matrix

Restricted Substance Name / Group	Type of Change
Chemical formulations ZDHC MRSL test	Newly added
Pesticides	Removed