



M0301 [2001-N]

Nissan Engineering Standard

۱۳۷۹ / ۲ / ۲۲ NES	Substance Use Restrictions	M 0301 Revised 2001
----------------------	----------------------------	------------------------

1. SCOPE

This Standard specifies all materials, parts and products used for automobiles.

- Remarks
- 1: In principle, standards shall meet relevant regulations for automobile production and sales in each country or state. This Standard provides additions or supplements to those standards.
 - 2: If there are requirements otherwise specified in the independent specifications or drawings, this Standard shall not be applied.

2. DRAWING NOTATION

"THE MATERIALS MUST CONFORM WITH NES M 0301 (Substance Use Restrictions)." shall be indicated in the note column of the drawing.

3. DEFINITION

3.1 Definition of prohibited substances and restricted substances for use, and non-restricted substances requiring attention

Table 1 Definition of prohibited substances and restricted substances for use, and non-restricted substances requiring attention

Item				
Prohibited substances and restricted substances	Definition	Laws and regulations		Reference
214 substances	Substances which does not allow inclusion in the product according to the law or the policy	Nissan's policy	• Restriction on use of asbestos (Nissan's policy) • Restriction on use of mercury, cadmium, lead and specific bromine based flame retardant (Nissan's policy)	Table 2, Table 5 (Contents)
		Entire world	• Montreal's Protocol for substances depleting ozone layer and relevant laws and regulations of each country based on the Protocol • Dioxins • Lists of POPs (Persistent Organic Pollutants) which are covered by the UNEP (United Nations Environment Programme)	
		Japan	• Class 1 specified chemical substances of the Law of Restriction on Examination and Manufacture of Chemical Substances (Chemical substances restriction law) • Toxic substances prohibited by the Industrial Safety and Health Law • Specified substances of the Law for Protection of Ozone Layer with restriction of specified substances • Target value for reduction of the recycle initiative	
		USA	• Restriction on toxic chemical substances and mixture of the Toxic Substances Control Act (TSCA USA)	
		Europe	• Lists of the restriction directives (EU) for restriction of marketing dangerous substances and chemicals • Prohibited chemical substances in the Chemical Substances Law (Germany) and Appendix IV of the Dangerous Substances regulation • Restriction on azo color of the Law for Food and Daily Necessities (Germany) • Directive 2000/53/EC on end-of life vehicles • Lists of self-prohibited and controlled substances by the German Automobile Association (VDA) • Swedish Chemical Substances Restriction (SFNS) • Regulation concerning substances dangerous for the environment • French decree	
	Bulk material (Note 1) which is additionally applicable to the regulation	Japan	• Existing chemical substances of the Law of Restriction on Examination and Manufacture of Chemical Substances (Chemical substances restriction law)	Table 3, Table 6 (Contents)
Non-restricted substances requiring attention 58 substances	Substances which may be possibly restricted in the future along with the establishment of substance restriction law or the social movement. These substances are not restricted.	USA	• Restriction on toxic chemical substances and mixture of the Toxic Substances Control Act (TSCA) • Lists of chemical substances by the TSCA (TSCA inventory)	
		Europe	• Lists of the restriction directive (EU) for restriction of marketing dangerous substances and chemicals • Lists of EU carcinogenic substances and lists of EU directive for classification, packing and identification of dangerous substances • Lists of existing chemical substances in Europe (EINECS)	
		Entire world	• Basel Convention, Toxic substance restriction by OECD	Table 4, Table 7 (Contents)
		Japan	• Environment Law, Water Pollution Control Law, Air Pollution Law, Underground Water Environmental Criteria, etc.	
		USA	• RCRA, HSWA, OSHA, etc.	
		Europe	• Directive for classification of wastes, directive for toxic and dangerous wastes, directive for pollution caused by toxic substance discharged in the water environment, directive for the limit value of discharged toxic substance and the target value of water quality, Agreement of the German Automobile Association, etc.	Table 10 (Text)

3.2 Content of specified substance in the material, part or product

If it is obvious that the substance concerned is added or included in the material, part or product, it is considered as "included" regardless of the content percentage.

However, impurities such as impurities in steels, residual monomer, residual solvent, etc. which cannot be removed from the process with the current reasonable technology level are excluded from the scope of this standard.

Note 1: "Bulk material" is substance, chemical or mixed material which is used in the form of non-article (product) in the law. This means the material included in the product with a non-formed and non-solid state (gas, liquid, powder, paste, etc.).

Examples in the automobile: Various oils, anti-freeze fluid, brake fluid, window washer fluid, grease, battery fluid, anti-rust coating (non-solid), etc. If substance in a container (e.g. spray) is installed on a car, it is also considered as bulk material. Fuel for gasoline and diesel engine is excluded because it is restricted by other laws.

Table 2 List of definitions of prohibited substances and restricted substances for use
(for general parts, continued) (in Japanese order)

No.	Material	Destination				Reference page
		Entire world	Japan	EU	North America	
T5	Trietanolamine salt of tricarboxylic acid		○	○	○	21
T3	1,1,1-Trichloroethane	○	○	○	○	23
T27	Trichloro phenoxy carboxylic and derivates			○		25
T8	Tris (aziridiny) phosphin oxide			○		24
T7	Tris (2,3dibromopropyl) phosphate			○	○	24
T30	2, 4, 6-tri-tert-buthyl phenol		○			25
N1	2-Naphthyl-amine		○			22
L1	Lead and its compounds		○	○		20
N12	Nickel and nickel compounds			○		25
N3	4-Nitrodiphenyl		○	○		22
N2	Nitroso-agent Nitrites		○	○	○	21
B4	Bis (Chloromethyl) ether		○			16
B5	Bis (tributyltin) =oxide		○			16
A4	Arsenic or its compounds		○	○		14
H5	Hydrochlorofluorocarbons			○	○	19
H4	Hydrobromofluorocarbons	○	○	○	○	19
P19	Propylene diamine tetraacetic acid			○		25
B22	Bromochloromethane			○		26
B6	Bromofluorocarbons	○	○	○	○	16
B19	Bromobenzyl bromotoluene			○		24
H14	Hexachloroethane			○		25
H13	Hexachlorocyclohexane			○		24
H2	Hexachlorobenzene	○	○	○	○	19
H3	Hexamethyl-phosphor-amide				○	19
H1	Heptachlor	○	○	○	○	19
P2	Pentachloro-ethane			○	○	22
P3	Pentachloro-phenol and its salt and esthers			○		22
P1	Pentabromo-ethylbenzene				○	22
P7	Pentabromo-diphenyl ether			○		23
B2	Benzidine (4,4-Diaminodiphenyl)		○	○		15
B1	Benzene		○	○		15
B3	Benzo[a]pyrene		○	○		16
P11	Polychlorinated terphenyls	○	○	○	○	23
P10	Polychlorinated nahthalene		○	○		23
P9	Polychlorinated diphenyls	○	○	○	○	23
P7	Polybrominated diphenyl ether			○		23
P6	Polybrominated difuranes	○	○	○	○	22
P8	Polybrominated terphenyls		○	○	○	23
P5	Polybrominated biphenyls	○	○	○	○	22
F1	Formaldehyde		○	○		19
M3	Mirex	○	○	○	○	21
M15	Methanol			○		25
M2	Methyl-n-buthyl ketone				○	21
M16	Monoethylglycol			○		25
M6	Monomethyldichloro-diphenylmethane	○	○	○	○	22
M5	Monomethyldibromo-diphenylmethane	○	○	○	○	22
M7	Monomethyltetrachlorodiphenylmethane	○	○	○	○	22
M17	N-mono (or di) methylphenyl-N'-mono (or di) methylphenyl para phenylendiamine		○			26
M4	Mixed mono and diamides of an organic acid		○	○	○	21
O1	Organo-Tin (Tri)		○	○		22
H6	Hydrogen sulfide		○	○		19
L4	Lead Sulfate			○		20
H10	Hexavelant chromium			○		25

Table 3 List of definitions of prohibited substances and restricted substances for use
(for bulk material, continued) (in Japanese order)

No.	Material	Destination	Reference page
		EU	
D26	Dinoterb	○	28
D27	Salts and esters of dinoterb	○	28
D29	1,2-Diphenyl hydrazine	○	29
D9	1,2-Dibromoethane	○	27
D8	1,2-Dibromo-3-Chloropropane	○	27
D7	Dibenz [a,h] anthracene	○	27
D17	Dimethylcarbamonyl chloride	○	28
D22	Dimethyl sulfamoylchloride	○	28
D20	1,1-Dimethylhydrazine	○	28
D21	1,2-Dimethylhydrazine	○	28
D18	Dimethylformamide	○	28
P21	Potassium dichromate	○	31
S7	Sodium dichromate	○	32
S8	Sodium dichromate, dihydrate	○	32
B21	Bromoethylene	○	31
P12	Potassium bromate	○	30
S2	Stylene oxide	○	31
Y1	C.I. pigmet yellow 34	○	31
D30	Direct Brown 95	○	29
D37	Direct Black 38	○	31
D38	Direct Blue 6	○	31
D39	Direct Red 28	○	31
R1	C.I. pigmet red 104	○	31
T9	1.1.1.2-Tetrachloroethane	○	31
T10	1.1.2.2-Tetrachloroethane	○	31
T29	1,3,5-Triglycidyl Isocyanurate; TGIC	○	32
T12	1.1.2-Trichloroethane	○	31
T13	Trichloromethane (Chloroform)	○	31
L15	Lead trinitroresorcinate	○	30
T11	o-toludine	○	31
T28	Toluene-2,4-Diammonium sulphate	○	32
N1	2-Naphthyl-amine	○	30
L10	Lead compound with the exception of those specifide elsewhere in this ANNEX	○	29
N4	5-Nitroacenaphthene	○	30
N5	o-Nitroanisole	○	30
N11	N-Nitrosodiethanolamine	○	30
N3	4-Nitrodiphenyl	○	30
N10	Nitrosodipropylamine	○	30
N9	N-Nitrosodimethylamine	○	30
N7	2-Nitronaphthalene	○	30
N6	Nitrofen	○	30
N8	2-Nitropropane	○	30
A9	P-aminoazobenzene	○	26
B4	Bis(chloromethyl)ether	○	27
D19	(((3,5-Bis(1,1-Dimethylethyl)-4-Hydroxyphenyl)methyl)thio) acetic acid 2-Ethylhexyl ester	○	28
B20	Bis (2-Methoxyethyl) phtalate	○	31
H7	Hydrazine	○	29
H8	Salt of hydrazine	○	29
H9	Hydrazine bis (3-Carboxy-4-Hydroxy bezenesulfonate)	○	29
B14	Binapacryl	○	27
B15	1,3-Butadiene	○	27
P13	1,3 propane sultone	○	30
P14	β -propiolactone	○	30
P15	Propyleneimine	○	30
P16	Propylene oxide	○	30
B21	Bromoethylene	○	31

Table 4 List of non-restricted substances requiring attention (continued) (in Japanese order)

No.	Material	Reference page
T18	Tin (dyes, pigments)	35
S3	Selenium and its compounds	34
T17	Thalium and its compounds	35
T16	Tetrachloroethylene	35
T15	Tetrabromobisphenol A (TBBA)	35
T14	Tellurium and its compounds	35
C20	Copper and its compounds	33
T19	Trichloroethylene	35
T20	Trichlorophenol and its salts (2,4,6-Tri chlorophenol)	35
T21	Trichloropropane (1,2,3-Trichloropropane)	35
T22	Trimethylphosphate and related compounds	35
T11	Toluidin (o-Toluidine)	35
N13	Nickel (dyes, pigments)	34
N16	Nitrocellulose	34
B16	Barium compounds (organic or water soluble) except Ba-carboxylate	32
H7	Hydrazine	34
C16	Chlorinated paraffins, linear chain	33
P18	Phenylenediamine	34
P17	Phenol	34
B15	Butadiene (1,3-Butadiene)	33
D31	Di-(2-ethyl)-hexylphthalate (DEHP, DOP)	33
D32	Dibutylphthalate (DBP)	33
H12	Hydrogen fluoride	34
F2	Fluorine/Fluorine compounds	33
B12	Beryllium and its compounds	33
B17	Boron and its compounds	33
M13	Mineral fibres: natural and synthetic (e.g. glass, ceramic fibres)	34
M12	Methylacrylamidomethoxyacetate	34
M14	Molybdenum	34
O2	Organic tin compounds (mono, di)	34
H10	Hexavalent chromium	34

Table 5 List of definitions of prohibited substances and restricted substances for use
(for general parts, continued) (in alphabetical order)

No.	Material	Destination				Reference page
		Entire world	Japan	EU	North America	
M2	Methyl-n-buthyl ketone				○	21
M3	Mirex	○	○	○	○	21
M4	Mixed mono and diamides of an organic acid		○	○	○	21
M16	Monoethylglycol			○		25
M5	Monomethyldibromo-diphenylmethane	○	○	○	○	22
M6	Monomethyldichloro-diphenylmethane	○	○	○	○	22
M17	N-mono (or di) methylphenyl-N'-mono (or di) methylphenyl para phenyldiamine		○			25
M7	Monomethyltetrachlorodiphenylmethane	○	○	○	○	22
N1	2-Naphthyl-amine		○			22
N12	Nickel and nickel compounds			○		25
N2	Nitroso-agent Nitrites		○	○	○	21
N3	4-Nitrodiphenyl		○	○		22
P7	Octabromo-diphenyl ether			○		23
O1	Organo-Tin (Tri)		○	○		22
P7	Pentabromo-diphenyl ether			○		23
P1	Pentabromo-ethylbenzene				○	22
P2	Pentachloro-ethane			○	○	22
P3	Pentachloro-phenol and its salt and esthers			○		22
P4	Phosphorous,yellow match		○			22
P5	Polybrominated biphenyls	○	○	○	○	22
P6	Polybrominated difuranes	○	○	○	○	22
P7	Polybrominated diphenyl ether			○		23
P8	Polybrominated terphenyls	○	○	○	○	23
P9	Polychlorinated diphenyls	○	○	○	○	23
P10	Polychlorinated nahthalene		○	○		23
P11	Polychlorinated terphenyls	○	○	○	○	23
P19	Propylene diamine tetraacetic acid			○		25
S6	Strobane			○		25
T23	Telodrine			○		25
T24	Tetrachlorophenol its salts and compounds of tetrachlorophenoxy			○		25
T1	Toxaphene	○	○	○	○	23
T25	Trialkyl tin		○	○		22
T26	Triaryl tin		○	○		22
T2	Trichloro buthylene oxide				○	23
T3	1.1.1-Trichloroethane	○	○	○	○	23
T27	Trichloro phenoxy carboxylic and derivates			○		25
T4	Triethanolamine salt of a substituted organic acid		○	○	○	21
T5	Triethanolamine salt of tricarboxylic acid		○	○	○	21
T6	Triethanolamine			○		23
T7	Tris (2,3dibromopropyl) phosphate			○	○	24
T8	Tris (aziridiny) phosphinoxide			○		24
T30	2, 4, 6-tri-tert-buthyl phenol		○			25
U1	Urethane (Ethyl carbamate)				○	24

Table 6 List of definitions of prohibited substances and restricted substances for use
(for bulk material, continued) (in alphabetical order)

No.	Material	Destination	Reference page
		EU	
D21	1,2-Dimethylhydrazine	○	28
D22	Dimethyl sulfamoylchloride	○	28
D23	Dimethylsulfate	○	28
D24	Dinoseb	○	28
D25	Salts and esters of dinoseb	○	28
D26	Dinoterb	○	28
D27	Salts and esters of dinoterb	○	28
D28	Di- μ -oxo-di-n-buthyl-stannio-hydroxyborane	○	28
D29	1,2-Diphenyl hydrazine	○	29
D37	Direct Black 38	○	31
D38	Direct Blue 6	○	31
D30	Direct Brown 95	○	29
D39	Direct Red 28	○	31
E4	Erionite	○	29
E5	Ethanethioamide	○	29
E6	2-Ethoxyethanol	○	29
E7	Ethyleneglycol monoethylether acetate	○	29
E8	Ethyleneglycol monomethyletheracetate	○	29
E9	Ethyleneimine	○	29
E10	Ethylene oxide	○	29
H2	Hexachlorobenzene	○	29
H3	Hexamethylphosphoramide	○	29
H10	Hexavelant chromium	○	31
H7	Hydrazine	○	29
H8	Salt of hydrazine	○	29
H9	Hydrazine bis (3-carboxy-4-hydroxy bezenesulfonate)	○	29
I1	2-Imidazolidinethione	○	29
L5	Lead acetate, basic	○	29
L6	Lead alkyls	○	29
L7	Lead azide	○	29
L8	Lead chromate	○	29
L9	Lead acetate	○	29
L10	Lead compound with the exception of those specifide elsewhere in this ANNEX	○	29
L11	Lead (II) fluorosilicat	○	30
L12	Leadacidarsenate	○	30
L13	Lead (II) methanesulphonate	○	30
L14	Lead (II) phosphate	○	30
L15	Lead trinitroresorcinate	○	30
M8	2-Methoxyethanol	○	30
M9	Methylazoxymethylacetate	○	30
M10	4,4'-Methylenebis (2-Methylaniline)	○	30
M11	N-Methyl-N'-Nitro-N-Nitrosoguanidine	○	30
N1	2-Naphthyl-amine	○	30
N4	5-Nitroacenaphthene	○	30
N5	o-Nitroanisole	○	30
N3	4-Nitrodiphenyl	○	30
N6	Nitrofen	○	30
N7	2-Nitronaphthalene	○	30

Table 7 List of non-restricted substances requiring attention (continued) (in alphabetical order)

No.	Material	Reference page
D31	Di-(2-ethyl)-hexylphthalate (DEHP, DOP)	33
D4	4,4'-diaminodiphenylmethane	33
D32	Dibutylphthalate (DBP)	33
D33	Dichloromethane	33
D13	1,2-dichloroethane	33
D15	Dichloropropanol (1,3-dichloro-2-propanol)	33
E11	Ethyl-methyl-glycols and their acetates	33
F2	Fluorine/Fluorine compounds	33
H10	Hexavalent chromium	34
H7	Hydrazine	34
H11	Hydrogen chloride	34
H12	Hydrogen fluoride	34
M12	Methylacrylamidomethoxyacetate	34
M13	Mineral fibres:natural and synthetic (e.g.glass, ceramic fibres)	34
M14	Molybdenum	34
N13	Nickel (dyes, pigments)	34
N14	Nitrate salt	34
N15	Nitrite salt	34
N16	Nitrocellulose	34
O2	Organic tin compounds (mono,di)	34
P17	Phenol	34
P18	Phenylenediamine	34
S3	Selenium and its compounds	34
S4	Sodium azide	34
S2	Styrene oxide	34
S5	Styrene (Residual monomer)	34
T14	Tellurium and its compounds	35
T15	Tetrabromobisphenol A (TBBA)	35
T16	Tetrachloroethylene	35
T17	Thallium and its compounds	35
T18	Tin (dyes, pigments)	35
T11	o-toluidine	35
T19	Trichloroethylene	35
T20	Trichlorophenol and its salts (2,4,6-Tri chlorophenol)	35
T21	Trichloropropane (1,2,3-Trichloropropane)	35
T22	Trimethylphosphate and related compounds	35
V1	Vinyl chloride (Residual monomer)	35
Z2	Zinc and its compounds	35
Z3	Zinc (dyes, pigments)	35

Table 8 Details of prohibited substances and restricted substances for use (for general parts, continued)

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
A6	Azoic dyes	RN=NR	NONE	Japan, EU	Use on dye for daily products that may cause one of the following specific amines shall be prohibited in Germany and Holland, and import of such products into these countries prohibited.				
		·4-Aminobiphenyl ·Benzidin ·4,4-Diaminobiphenyl ·4-Chlor- o -Toluidin ·2-Naphthylamin ·β-Aminonaphtalin ·o-Aminoazotoluol ·2-Amino-4-Nitrotoluol ·p-Chloranilin ·2,4-Diaminoanisol ·4,4-Diaminodiphenylmethane ·3,3-Dichlorbenzidin ·3,3-Dimethoxybenzidin ·o-Dianisidin ·3,3-Dimethylbenzidin ·o-Tolidin ·3,3-Dimethyl-4,4-Diaminodiphenylmethan ·4,4-Methylenedi- o -Toluidin ·p-Kresidin ·4,4-Methylen-Bis-2-Chloranilin ·4,4-Oxydianilin ·4,4-Thiodianilin ·o-Toluidin ·2,4-Toluenediamine ·2,4-Diaminetoluol ·m-Toluienediamine ·4-Methyl-m-Phenylendiamine ·2,4,5-Trimethylanilin * (6-Amino-2-etoxyaphtalin) * (4-Amino-3-fluorophenol) * (o-anisidine(2-metoxyaniline)) * (4-Aminoazobenzene) * Added in 2000				Applied, but voluntary measure in Japan	Germany Azo pigment restriction TRGS 614 on the Food and Daily Necessities Law Holland Azo pigment restriction		Dyes
B1	Benzene	C ₆ H ₆	71-43-2	Japan	Manufacture, import and use of benzene rubber glue with 5% or more benzene content prohibited.	Applied	Manufacture of the substance is prohibited by the Industrial Safety and Health Law.	Central nervous system, skin and mucous disorder, Carcinogenic	Synthetic rubber, resin, plasticizer, solvent
				Austria	Cold cleaning products used at ambient temperature to remove grease from metal parts shall not contain: - halogenous hydrocarbons, - aromatic hydrocarbons with concentrations of more than those indicated: benzen:0.01% ethylbenzene:0.05% dimethylbenzene:0.25% The flash point shall not be less than 55°C				
B2	Benzidine (4,4-Diamino diphenyl)	C ₆ H ₄ NH ₂ -C ₆ H ₄ NH ₂	92-87-5	Japan	Manufacture, import and use of benzidine (including its salt) and preparations containing 1% or more benzidine prohibited.	Applied	Manufacture of the substance is prohibited by the Industrial Safety and Health Law.	Carcinogenic	Synthetic rubber hardener

Table 8 Details of prohibited substances and restricted substances for use (for general parts, continued)

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
C1	Cadmium and its compounds	Cd	7-440-43-9	Japan	Use prohibited from January 1, 2001. Impurities included not intentionally shall not be applied.	Voluntary measure		Stimulant to eye and airway, liver and kidney disorder, carcinogenic, possibility of endocrine disruptors	Electrical point, paint, stainer, PVC, stabilizer, sensor, soft solder
				U.S.A CANADA	Use after January 1, 2001 shall be prohibited. This does not apply to unintended mixture of impurities.				
				EU	Use after January 1, 2001 shall be prohibited. This does not apply to unintended mixture of impurities.				
					Use after July 1, 2003 shall be prohibited.	Announcement for limitation of use	Directive 2000/53/EC on end-of life vehicles		
					Use prohibited as coloring agent on the products made of the following substances. If Cd contents is 0.01% or more in the plastic materials, sale of products is prohibited. (Use for safety reason is excluded): 1) Polyvinyl chloride, Polyurethane, Low density polyurethane Epoxy resin, Cellulose acetate butylate, Cellulose acetate, Melamine formaldehyde resin, Urea formaldehyde resin, Unsaturated polyester, Polyethylene terephthalate, Polybutylene terephthalate, Transparent/general-purpose polystyrene Acrylonitrile methyl methacrylate copolymer, Polypropylene, Bridged polyethylene, Impact resistance polystyrene, Paint (If zinc content is high, residual Cd concentration shall be 0.1% or less) 2) Use as stabilizer in automobile accessory parts, imitation leather, transportation vehicle (interior, exterior and bottom) and insulation materials for electric wiring made of vinyl chloride polymer and copolymer shall be prohibited. (Use for safety reasons is excluded) Cadmium plating for the following metallic products is prohibited (excluding automobile safety equipment and electric connectors). Automobile parts, tools, machine tool and air conditioner.	Applied	91/338/EEC CemVerbots V No. 18 GefStoff V Appendix IV No. 17		
				Sweden	Use prohibited as coloring agent, stabilizer and surface treatment. Use for alloy (electric contacts) and marking is allowed.	Applied	SNFS PK: 28 SNFS PK: 34		
				Switzerland	a) Objects consisting entirely or partially of plastic materials containing Cd cannot be imported as commercial goods, nor submitted by a manufacture, but justified exemption of a limited period can be accorded when no cadmium-free substitute exists. b) Cadmium-plated objects can neither be imported as commercial goods nor submitted by a manufacturer, but exemptions can be obtained if there is no known cadmium-free substitute, and for vehicles and objects which must be simultaneously protected against corrosion and offer certain antifriction properties, together with spare parts for cadmium-plated objects. c) For zinc-plated objects, the maximum cadmium content is 250mg cadmium per kg of zinc, since 1/1/91.	Applied	Regulation concerning substances dangerous for the environment		

Table 8 Details of prohibited substances and restricted substances for use (for general parts, continued)

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
E2	Epibromohydrin	C_3H_5OBr	3132-64-7	USA	Permission is required for any use.	Applied	TSCA Clause 5		
E3	Erionite fiber		66733-21-9	USA	Permission is required for any use.	Applied	TSCA Clause 5		
F1	Formaldehyde	HCHO	50-00-0	Japan, EU	Use prohibited of 1% or more.	Voluntary measure	(Reference) VDA Self regulation substance	Stimulant to eye and respiratory organ, central nervous system, kidney and skin disorder, carcinogenic, mutagen	Adhesive, Antiseptic
H1	Heptachlor	$C_{10}H_5Cl_7$	76-44-8	Entire world	Use prohibited.	Applied	POPs Substance	Carcinogenic	Agricultural chemicals
H2	Hexachlorobenzene	C_6Cl_6	118-74-1	Japan	Use prohibited. Manufacture and import prohibited without permission.	Applied	Law Concerning the Examination and Regulation of Manufacture, etc., of Chemical Substances, Class 1 Special chemical substance	Central nervous system, kidney and skin disorder, carcinogenic, possibility of endocrine disruptors	Antiseptic for wood, insecticide, antimold, and paint (for antiseptic, insecticide, antimold)
				Entire world	Use prohibited.	Applied	POPs Substance		
H3	Hexamethylphosphoramide	$(N(CH_3)_2)_3PO$	680-31-9	USA, Canada	Permission is required for any use.	Applied	TSCA Clause 5	Mutagen, carcinogenic	
H4	Hydrobromofluorocarbons	CHF_2Br (1201)		Entire world	Use prohibited of hallon 1201, 2401, 2311, etc.,.	Applied	Montreal Protocol	Global warming substance	Extinguisher
H5	Hydrochlorofluorocarbons	$CClF_2CH_2Cl$ (132), etc.	25915-78-0, etc.	Entire world	Use prohibited of HCFC 21, 22, 31, 121, 122, 123, 124, 131, 132, 133, 141, 142, 151, 221, 222, 223, 224, 225, 226, 231, 232, 233, 234, 235, 241, 242, 243, 244, 251, 252, 253, 261, 262, 271, 141b, 142b, 225ca, and 225cb from Jan. 1 2020.	Announcement to restriction for use	Montreal Protocol	Global warming substance	Antiseptic, cleaners
				EU	Prohibited for use of aerosol, air conditioner and foaming products (excluding parts for safety). All products cleaned shall be prohibited to use from Jan. 1 2002.	Applied	2000/2037/EC		
				USA, Canada	Prohibited for use of aerosol and foaming products.	Applied	40CFR Part 82 Subpart E		
H6	Hydrogen Sulfide	H_2S	7783-06-4	Japan, EU	Use prohibited.	Voluntary measure	(Reference) VDA Self regulation substance	Stimulant to eye, airway, central nervous system disorder	

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
M2	Methyl-n-buthyl ketone	$\text{CH}_3\text{CO}(\text{C}_2\text{H}_5)_3$	591-78-6	USA, CANADA	Permission is required for any use. Manufacture and import shall not be allowed. However, if there is no alternative, use that does not exceed the required limit can be exempted.	Applied	TSCA Clause 5		
M3	Mirex	$\text{C}_{10}\text{Cl}_{12}$	2385-85-5	Entire world	Use prohibited.	Applied	POPs Substance	Carcinogenic	Agricultural chemicals
M4 N2 T4 T5	Mixed mono and diamides of an organic acid Trietanol amine salt of a substituted organic acid Trietanol amine salt of tricarbonylic acid	R-NH_2 $\text{R-N}(\text{CH}_2\text{CH}_2\text{OH})_2$ $\text{R-N}(\text{CH}_2\text{CH}_2\text{OH})_3$		Japan, EU, USA, CANADA	Nitroso-agent* such as nitrous acid shall not be added to lubricant, coolant and rust preventives containing materials described in the left. *Nitroso-agent Substance which may convert nitrosyl-amine, forming corresponding nitroso-amine.	Applied	TSCA Clause 6 GefStoff V Appendix IV No. 19	Kidney disorder, carcinogenic	Lubricating oil, coolant and rust preventive wax

Table 5 Details of prohibited substances and restricted substances for use (for general parts, continued)

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
P7	Polybrominated diphenyl ether	C ₆ Br ₅ -O-C ₆ Br ₅ , etc.	1163-19-5, etc	Japan, EU	Use prohibited from 2003. Polybrominated diphenyl ether includes pentabromodiphenylether (PeBDPE), octabromo-diphenylether (OBDPE), decabromo-diphenylether (DBDPE), etc.	Voluntary measure		Possibility of dioxin at burning	Flame retardant
P8	Polybrominated terphenyls	C ₆ H ₄ Br-C ₆ H ₄ -C ₆ H ₄ Br, etc.		Entire world	Use prohibited.	Applied	TSCA	Skin disorder, carcinogenic	Condenser
P9	Polychlorinated diphenyls	C ₆ H ₄ Cl-C ₆ H ₄ Cl, etc.	1136-36-3	Entire world	Use prohibited.	Applied	76/769/EEC ChemVerbots V GefStoff Appendix IV No. 12, POPs Substance	Stimulant to eye and skin, kidney disorder, carcinogenic, possibility of endocrine disruptors	Condenser
P10	Polychlorinated nahthalene	C ₁₀ H ₇ Cl, etc.	7077-6-03-3, etc.	Japan	Manufacture, import and use of PCN with chloric number 3 or more shall be prohibited without permission.	Applied	Law Concerning the Examination and Regulation of Manufacture, etc., of Chemical Substances, Class 1 Special chemical substance	Skin disorder, carcinogenic	Solvent, softening agent
				Switzerland	Use prohibited.	Applied	Regulation concerning substances dangerous for the environment		
P11	Polychlorinated terphenyls	C ₆ H ₄ Cl-C ₆ H ₄ -C ₆ H ₄ Cl, etc.		Entire world	Use prohibited.	Applied	76/769/EEC ChemVerbots V GefStoff Appendix IV No. 12	Stimulant to eye and skin, kidney disorder, carcinogenic	
T1	Toxaphene	C ₁₀ H ₁₀ Cl ₈	8001-35-2	Entire world	Use prohibited.	Applied	POPs	Carcinogenic	Agricultural chemicals
T2	Trichlorobutylene oxide	C ₄ H ₅ Cl ₃ O		USA	Permission is required for any use.	Applied	TSCA Clause 5		
T3	1,1,1-Trichloroethane	CCl ₃ -CH ₃	71-55-6	Entire world	Use prohibited.	Applied	Montreal Protocol	Anesthetic effect, nervous system disorder, ozone depletion	Solvent, cleaners
T6	Triethanolamine	N(CH ₂ CH ₂ OH) ₃	102-71-6	Norway	Manufacture, sale and import of coolant containing triethanolamine shall be prohibited.	Applied		Stimulant to skin, mucous stimulation, anesthetic effect, pneumonia, kidney disorder	Additive for lubricating oil, solvent

Table 8 Details of prohibited substances and restricted substances for use (for general parts, continued)

No.	Material	Chemical formula	CAS No.	Destination	Restrictions	Application	Regulation	Hazard	Application examples
H14	Hexachloroethane	C_2Cl_6	67-72-1	EU	Prohibited for manufacture or transformation of ferrous metals	Applied	97/16/EC		
I2	Isodrin	$C_{12}H_8Cl_6$	465-73-6	Switzerland	Use prohibited.	Applied	Regulation concerning substances dangerous for the environment	Kidney disorder	Insecticide
K1	Kelevane								Insecticide
M15	Methanol	CH_3OH	67-56-1	Sweden	Coolants, cleaning fluids and other car care products cannot be sold if the quantity of methanol they contain is equal to or greater than 5% in weight of the quantity of ethanol.	Applied	SFS 1985 : 840	Eye disorder	Cooling agent, washing material, wax
M16	Monoethylglycol(Ethylene-glycol mono-ether)	$C_2H_5OC_2H_4OH$		France	Pure or diluted solutions placed in a package shall contain a repulsive agent, the nature and conditions of use of which are stipulated in the decree.	Applied	Decree 94-647	Skin stimulation, stomach and kidney disorder, mutagen	Cooling agent, washing material, paint
N12	Nickel and its compounds	Ni	7440-020-0	EU	Use prohibited in products intended to come into direct and prolonged contact with the skin if the nickel release rate is greater than $0,5 \mu g$ per cm^2 and per week.	Applied	94/27/EC	Inflammation, skin inflammation, asthma, carcinogenic	Alloy, plating
P19	Propylene diamine tetra-acetic acid (PDTA)	$(CH_2COOH)_2N(CH_2)_3N(CH_2COOH)_2$		Switzerland	Cleaning products cannot be manufactured or imported if they contain PDTA or its salts, together with compounds derived from it, in quantities of more than 1% per weight (total sum)	Applied	Regulation concerning substances dangerous for the environment	Kidney disorder, conectionall intoxication	Washing material
S6	Strobane (Terpenopolychlorinates)		8001-50-1		Use prohibited.				Insecticide
T23	Telodrine	$C_9H_4Cl_8O$	297-78-9		Use prohibited.				Insecticide
T24	Tetrachlorophenol its salts and compounds of tetrachlorophenoxy	$OH(C_6H)Cl_4$	58-90-2		Use prohibited.			Carcinogenic	
T27	Tri-chlorophenoxy carboxylic acid and derivatives	$C_6H_2Cl_3OC(=O)H$ $C_6H_2Cl_3OC(=O)R$ etc.			The following substances are prohibited: - 2,4,5 trichlorophenoxyacetic acid and its salts, together with compounds of trichloro-2,4,5 phenoxyacetyl-, (2,4,5 trichlorophenoxy)-2 propionic acid and its salts, together with compounds of (2,4,5 trichlorophenoxy)-2 propionyle.				
H10	Hexavalent chromium	Cr_6^{+}	24613-89-6	EU	Use after July 1, 2003 shall be prohibited. If the material is used for non-applicable parts in page 38, the quantity shall be reported.	Announcement for limitation of use	Directive 2000/53/EC on end-of life vehicles	Nasal septal perforation, disorder of respiratory organ, liver and kidney, carcinogenicity	Surface treatment for rust prevention
M17	Methyl bromide	CH_3Br	74-83-9	Entire world	Use after January 1, 2005 shall be prohibited.	Announcement for limitation of use	Montreal Protocol	Skin irritation, anesthetic, disorder of central nerve	Bactericide, mildew-proof agent
T30	2,4,6-tri-tert-butyl phenol	$C_{26}H_{38}O$ $(C_4H_9)_3C_6H_2OH$	732-26-3	Japan	Use shall be prohibited. Unauthorized manufacture or import shall be prohibited.	Applied	Grade 1 substance, Law concerning the examination and regulation of manufacture, etc. of chemical substances	Disorder of liver and kidney	Lubrication oil, fuel anti-oxidant
M17	N-mono (or di) methyl phenyl-N-mono (or di) methyl phenyl para phenylenediamine	$C_6H_4(NHC_6H_5CH_3)_2$		Japan	Use shall be prohibited. Unauthorized manufacture or import shall be prohibited.	Applied	Grade 1 substance, Law concerning the examination and regulation of manufacture, etc. of chemical substances	Disorder of liver, spleen and adrenal	Rubber anti-oxidant