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NETHERLANDS – PRIORITISATION METHOD FOR SUBSTANCES USED IN TEXTILE PRODUCTION

The Netherlands National Institute for Public Health and the Environment (RIVM) was requested by the Dutch food and product safety authority to develop a prioritization method for substances used in textile production¹. The method was presented in the report “Hazardous substances in textile products” (RIVM Report 2014-0155)² for indication of high-priority substances registered under REACH.

Substances considered in the prioritization method for textiles are those registered in the European legislation REACH based on their hazard characteristics. The prioritization method is practical and based not only on the classification of the substances but also on additional aspects like the presence of the substance in the final textile article, its use during the production process of textiles, toxicity and estimated consumer exposure. According to the report, this method identified 788 individual substances, 32 of which had the highest priority scores, and most substances with a high priority were dyes and flame retardants.



TABLE 1. EXTRACTED SUBSTANCES WITH HIGHEST PRIORITY SCORES FROM RIVM REPORT 2014-0155

NAME	CAS	REMARKS
Dibutyltin dilaurate	77-58-7	REACH Restriction Annex XVII; 0.1% consumer articles
Dibutyltin oxide	818-08-6	REACH Restriction Annex XVII; 0.1% consumer articles
Methanaminium, N-[4-[[4-(dimethylamino) phenyl] phenylmethylene]-2,5-cyclohexadien-1-ylidene]-N-methyl-,acetate	41272-40-6	Dye, malachite green acetate
Tris[2-chloro-1-(chloromethyl)ethyl] phosphate	13674-87-8	TDPC flame retardant; Risk Assessment Report (RAR) assessed

¹ [RIVM Risk Assessment Release](#)

² [RIVM Report 2014-0155](#)

Diocetyl tin bis-(ethylmaleate)	68109-88-6	REACH Restriction Annex XVII; 0.1% consumer articles
Diocetyl tin laurate	3648-18-8	REACH Restriction Annex XVII; 0.1% consumer articles
Phenol, isopropylated, phosphate (3:1)	68937-41-7	Flame retardant polyvinyl
Tris(methylphenyl) phosphate	1330-78-5	Flame retardant
Dicyclohexyl phthalate	84-61-7	Plasticizer; Repro classification under assessment by Committee for Risk Assessment (RAC)
Diisobutyl phthalate	84-69-5	Plasticizer; REACH Authorization list Annex XIV
N,N-diethylaniline	91-66-7	Intermediate
2,2'-iminodiethanol	111-42-2	Manufacture of dyes, additive textile chemicals
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	Plasticizer; REACH Restriction Annex XVII; 0.1% toys and child care articles; REACH Authorization list Annex XIV
Antimony Trioxide	1309-64-4	Flame retardant; The Repr 1A classification is only applicable to certain forms of the substance with high lead oxide content.
Divanadium pentaoxide	1314-62-1	Intermediate
1,1'-(1,1-dimethyl-3-methylene-1,3- propanediyl) bisbenzene	6362-80-7	--
Cobalt dichloride	7646-79-9	Used as humidity indicator (combination with silica); The Carc 1A classification is based on the presence of nickel in some forms.
Cobalt sulphate	10124-43-3	Used for the manufacture of pigments; The Carc 1A classification is based on the presence of nickel in some forms.
Hexabromocyclododecane	25637-99-4	Flame retardant; REACH Authorization list Annex XIV
Benzenamine, reaction products with aniline hydrochloride and nitrobenzene, hydrochlorides	101357-16-8	Confidential
TE_FAT40812/A_03-05-0479_IT_EC445-040-3_CAS577954- 20-2_RED TZ 5271	577954-20-2	Dye
Tetrakis (hydroxymethyl) phosphonium chloride, oligomeric reaction products with urea (Monomer)	27104-30-9	Flame retardant

Referring to the comments from the Ecological and Toxicological Association of Dyes and Organic Pigments Manufacturers (ETAD) and the European Apparel and Textile Confederation (EURATEX), some recommendations should be considered to improve the prioritization method, including:

- Clarify that the parameter of migration from the dyed textile should be indicated by different fastness values
- Consider the relevance of the identified substances for the textile and clothing industry
- Consider the probability of substance that is still in the finished textile after all processing steps

Apart from the comments, RIVM is taking into account for further development and validation include establishing a realistic exposure model to perform a risk assessment for hazardous substances in textiles and collecting substance specific information on the concentration and release from textiles.

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