

**CTCP - BIOCONFORT**

EXPANSION PROJECT FOR TEST LABORATORY

# ESTUDO E IMPLEMENTAÇÃO DO REACH NO CALÇADO

CTCP, JULHO 2015



## REACH NO CALÇADO

O REACH é um regulamento da União Europeia aprovado com o objetivo de melhorar a proteção da saúde humana e do ambiente face aos riscos que podem resultar dos produtos químicos e, simultaneamente, de fomentar, a competitividade da indústria química da União Europeia. Este regulamento promove igualmente métodos alternativos para a avaliação dos perigos das substâncias tendo em vista a redução do número de ensaios em animais.

O Regulamento (CE) n.º 1907/2006, relativo ao Registo, Avaliação, Autorização e Restrição de substâncias químicas (REACH -*Registration, Evaluation, Authorisation and Restriction of Chemicals*), entrou em vigor em 1 de junho de 2007.

No decorrer dos anos o CTCP sentiu uma dificuldade das empresas em aplicar este regulamento. Nesse sentido criou-se o presente documento que inclui:

**Tabela 1:** Identificação das substâncias altamente perigosas incluídas no Anexo XIV do REACH – Regulamento (EU) n.º 348/2013 de 17 de Abril de 2014;

**Tabela 2:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 28 de Outubro de 2008;

**Tabela 3:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 13 de Janeiro de 2010;

**Tabela 4:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 30 de Março de 2010;

**Tabela 5:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 18 de Junho de 2010;

**Tabela 6:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 15 de Dezembro de 2010;

**Tabela 7:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Junho de 2011;

**Tabela 8:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Dezembro de 2011;

**Tabela 9:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 18 de Junho de 2012;

**Tabela 10:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 19 de Dezembro de 2012;

**Tabela 11:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Junho de 2013;

**Tabela 12:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 16 de Dezembro de 2013;

**Tabela 13:** Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 16 de Junho de 2014.

Tabela 1: Identificação das substâncias altamente perigosas incluídas no Anexo XIV do REACH – Regulamento (EU) nº 348/2013 de 17 de Abril de 2014

ID	Substance name	CAS number	EC number	Group	Reason for inclusion	Occurrence in Footwear
1.1	5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4		vPvB (article 57e)	Not used in footwear or footwear components
1.2	4,4'- Diaminodiphenylmethane	101-77-9	202-974-4	Aryl amine	Carcinogenic (article 57a)	Not used as a free compound  This substance can be detected after the degradation of:  — azo colorant, see annex XVII of Reach)  — PU material, (false positive result is possible, generated as a marker in testing of PU material)
1.3	Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ – HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD)	25637-99-4 and 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8)	247-148-4 and 221-695-9		PBT (article 57d)	Not used in footwear or footwear components (flame retardant for electronics)
1.4 <sup>a</sup>	Bis (2-ethyl(hexyl)phthalate) (DEHP)	117-81-7	204-211-0	phthalate	Toxic for reproduction (article 57c)	Possible (concentration higher than 0,1% possible)
1.5 <sup>a</sup>	Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	phthalate	Toxic for reproduction (article 57c)	Possible (concentration higher than 0,1% possible)
1.6 <sup>a</sup>	Dibutyl phthalate (DBP)	84-74-2	201-557-4	phthalate	Toxic for reproduction (article 57c)	Possible (concentration higher than 0,1% possible)

ID	Substance name	CAS number	EC number	Group	Reason for Inclusion	Occurrence in Footwear
1.7	2,4 – Dinitrotoluene (2,4-DNT)	121-14-2	204-450-0	Aromatic hydrocarbons	Carcinogenic (article 57a)	Not used in footwear or footwear components
1.8	Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	204-118-5	Tris(2-chloroethyl)phosphate (TCEP)	Toxic for reproduction (article 57c)	Not used in footwear or footwear components  (flame retardant for furniture, plasticizer for PU-PVC)
1.9	Diarsenic pentaoxide	1303-28-2	215-116-9	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
1.10 <sup>a</sup>	Lead sulfochromate yellow (C.I. Pigment Yellow 34)	1344-37-2	215-693-7	Substances containing lead	Carcinogenic and toxic for reproduction (articles 57 a and 57 c)	possible pigment in certain surface coating
1.11 <sup>a</sup>	Lead chromate molybdate sulphate red (C.I. Pigment Red 104)	12656-85-8	235-759-9	Substances containing lead	Carcinogenic and toxic for reproduction (articles 57 a and 57 c)	possible pigment in certain surface coating
1.12	Diarsenic trioxide	1327-53-3	215-481-4	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
1.13 <sup>a</sup>	Lead chromate	7758-97-6	231-846-0	Substances containing chromate	Carcinogenic and toxic for reproduction (articles 57 a and 57 c)	possible pigment in certain surface coating
1.14 <sup>a</sup>	Diisobutyl phthalate (DIBP)	84-69-5	201-553-2	phthalate	Toxic for reproduction (article 57c)	Possible  (concentration higher than 0,1% possible)
1.15	Trichloroethylene	79-01-6	201-167-4	Chlorinated aliphates	Carcinogenic (article 57 a)	Solvent used in not flammable adhesive, volatile product can be present only as a residue.  More possible to detect in the footwear packaging than in the footwear

ID	Substance name	CAS number	EC number	Group	Reason for inclusion	Occurrence in Footwear
1.16	Chromium trioxide	1333-82-0	215-607-8	Substances containing chromium	Carcinogenic and mutagenic (articles 57a and 57b)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.17	Chromic acid, Dichromic acid, Oligomers of chromic acid and dichromic acid	7738-94-5, 13530-68-2, not yet assigned	231-801-5, 236-881-5, not yet assigned	Substances containing chromium	Carcinogenic (article 57a)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.18	Sodium dichromate	7789-12-0 and 10588-01-9	234-190-3	Substances containing chromate	Carcinogenic, mutagenic and toxic for reproduction (articles 57a, 57b and 57c)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.19	Potassium dichromate	7778-50-9	231-906-6	Substances containing chromate	Carcinogenic, mutagenic and toxic for reproduction (articles 57a, 57b and 57c)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.20	Ammonium dichromate	7789-09-5	232-143-1	Substances containing chromate	Carcinogenic, mutagenic and toxic for reproduction (articles 57a, 57b and 57c)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.21	Potassium chromate	7789-00-6	232-140-5	Substances containing chromate	Carcinogenic and mutagenic (articles 57a and 57b).	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.22	Sodium chromate	7775-11-3	231-889-5	Substances containing chromate	Carcinogenic, mutagenic and toxic for reproduction (articles 57 a, 57 b and 57 c)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)

ID	Substance name	CAS number	EC number	Group	Reason for inclusion	Occurrence in Footwear
1.23	Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	500-036-1	aldehyde	Carcinogenic (article 57a)	reaction products Not used in footwear or footwear components
1.24	Arsenic acid	7778-39-4	231-901-9	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
1.25	Bis(2-methoxyethyl) ether	111-96-6	203-924-4	Dihydroxy ether	Carcinogenic (article 57a)	Not used in footwear or footwear components volatile product, traces can be present only as a residue.
1.26	1,2-Dichloroethane; ethylene dichloride	107-06-2	203-458-1	Chlorinated aliphate	Carcinogenic (article 57a)	Solvent used in not flammable adhesive, volatile product can be present only as a residue. More possible to detect in the packaging of footwear than in the footwear itself.
1.27	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	202-918-9	Aryl amine	Carcinogenic (article 57a)	Used as a curing agent in PU industry, Possible in certain technical PU  Only low level residue will be expected (less than 0,1%)
1.28	Dichromium tris(chromate)	24613-89-6	246-356-2	Substances containing chromium	Carcinogenic (article 57a)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.29	Strontium chromate	7789-06-2	232-142-6	Substances containing chromate	Carcinogenic (article 57a)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)



ID	Substance name	CAS number	EC number	Group	Reason for inclusion	Occurrence in Footwear
1.30	Potassium hydroxyoctaoxodizincatedichromate	11103-86-9	234-329-8	Substances containing chromate	Carcinogenic (article 57a)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
1.31	Pentazinc chromate octahydroxide	49663-84-5	256-418-0	Substances containing chromium	Carcinogenic (article 57a)	Not used in footwear or footwear components (Cr VI possible in leather at low concentration)
<sup>a</sup> These substances are especially important for footwear and footwear components.						

Tabela 2: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 28 de Outubro de 2008

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
2.1	Bis(tributyltin) oxide (TBTO)	56-35-9	200-268-0	Substances containing tin	PBT (article 57d)	Not used in footwear or footwear components Use in the pass as a preservative agent
2.2 <sup>a</sup>	Anthracene	120-12-7	204-371-1	PAHs	PBT (article 57d)	PAH compound Possible contaminant (recycled materials or leather fat liquor)
2.3	Lead hydrogen arsenate	7784-40-9	232-064-2	Arsenic compounds	Carcinogenic and toxic for reproduction (articles 57 a and 57 c)	Not used in footwear or footwear components
2.4	Triethyl arsenate	15606-95-8	427-700-2	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
2.8 <sup>a</sup>	Alkanes, C10-13, chloro [Short Chain Chlorinated paraffins] (SCCP)	85535-84-8	287-476-5	Chlorinated aliphates	PBT and vPvB (articles 57 d and 57 e)	Possible (flame retardant for textile or fat liquor for leather)
	See table 1 – 1.3					
	See table 1 – 1.2					
	See table 1 – 1..6					
	See table 1 – 1.18					
	See table 1 – 1.7					
	See table 1 – 1.9					
	See table 1 – 1.4					
	See table 1 – 1.5					
	See table 1 – 1.12					
	See table 3 - 3.6					
<sup>a</sup> These substances are especially important for footwear and footwear components.						



Tabela 3: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 13 de Janeiro de 2010

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
3.1	Coal tar pitch, high temperature	65996-93-2	266-028-2	PAHs	Carcinogenic, PBT and vPvB (articles 57a, 57d and 57e)	Not used in footwear or footwear components
3.5	Anthracene oil	90640-80-5	292-602-7	PAHs	Carcinogenic[1], PBT and vPvB (articles 57a, 57d and 57e)	Not used in footwear or footwear components
3.6	Anthracene oil, anthracene paste, distr. Lights	91995-17-4	295-278-5	PAHs	Carcinogenic[2], mutagenic[3], PBT and vPvB (articles 57a, 57b, 57d and 57e)	
3.7	Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9	PAHs	Carcinogenic[2], mutagenic[3], PBT and vPvB (articles 57a, 57b, 57d and 57e)	
3.8	Anthracene oil, anthracene-low	90640-82-7	292-604-8	PAHs	Carcinogenic[2], mutagenic[3], PBT and vPvB (articles 57a, 57b, 57d and 57e)	
3.9	Anthracene oil, anthracene paste	90640-81-6	292-603-2	PAHs	Carcinogenic[2], mutagenic[3], PBT and vPvB (articles 57a, 57b, 57d and 57e)	
3.10	Aluminosilicate Refractory Ceramic Fibres	—	—	Refractory Ceramic Fibres	Carcinogenic (article 57a)	Not used in footwear or footwear components
3.11	Zirconia Aluminosilicate Refractory Ceramic Fibres	—	—	Refractory Ceramic Fibres	Carcinogenic (article 57a)	Not used in footwear or footwear components
	See table 1 – 1.7					
	See table 1 – 1.8					
	See table 1 – 1.10					
	See table 1 – 1.11					
	See table 1 – 1.13					
	See table 1 – 1.14					
a These substances are especially important for footwear and footwear components.						

Tabela 4: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 30 de Março de 2010

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
4.1	Acrylamide	79-06-1	201-173-7	Amides	Carcinogenic and mutagenic (articles 57 a and 57 b)	Not used in footwear or footwear components (possible in polymers not fully polymerized)
* These substances are especially important for footwear and footwear components.						

Tabela 5: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 18 de Junho de 2010

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
5.2	Disodium tetraborate anhydrous	1303-96-4, 1330-43-4, 12179-04-3	215-540-4	Substances containing boron	Toxic for reproduction (article 57 c)	Not used in footwear or footwear components (leather: possible traces, use for the preservation of raw hides  Flame retardant for plastics)
5.3	Boric acid	10043-35-3, 11113-50-1	233-139-2, 234-343-4	Substances containing boron	Toxic for reproduction (article 57 c)	Not used in footwear or footwear components (leather: possible traces, use for the preservation of raw hides  Flame retardant for plastics)
5.8	Tetraboron disodium heptaoxide hydrate	12267-73-1	235-541-3	Substances containing boron	Toxic for reproduction (article 57c)	Not used in footwear or footwear components (leather : possible traces, use for the preservation of raw hides  Flame retardant for plastics)
	See table 1 – 1.15					
	See table 1 – 1.19					
	See table 1 – 1.20					
	See table 1 – 1.21					
	See table 1 – 1.22					

\* These substances are especially important for footwear and footwear components.

Tabela 6: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 15 de Dezembro de 2010

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
6.3	2-Ethoxyethanol; Ethylene glycol monoethyl ether (EGEE)	110-80-5	203-804-1	Dihydroxy ethers	Toxic for reproduction (article 57c)	Not used in footwear or footwear components  (possible in certain leather finishing at low levels)
6.4	2-Methoxyethanol; Ethylene glycol monomethyl ether (EGME)	109-86-4	203-713-7	Dihydroxy ethers	Toxic for reproduction (article 57c)	Not used in footwear or footwear components  (possible in certain leather finishing at low levels)
6.5	Cobalt (di)acetate	71-48-7	200-755-8	Substances containing cobalt	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
6.6	Cobalt carbonate	513-79-1	208-169-4	Substances containing cobalt	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
6.7	Cobalt dinitrate	10141-05-6	233-402-1	Substances containing cobalt	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
6.8	Cobalt sulphate	10124-43-3	233-334-2	Substances containing cobalt	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
	See table 1 – 1.16					
	See table 1 – 1.17					
* These substances are especially important for footwear and footwear components.						

Tabela 7: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Junho de 2011

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
7.1 <sup>a</sup>	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	276-158-1	Phthalates	Toxic for reproduction (article 57c)	Theoretically possible  Practically never has been detected in footwear or footwear components
7.2	1,2,3-trichloropropane	96-18-4	202-486-1	Chlorinated aliphates	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Solvent in rubber industry volatile product, traces can be present only as a residue.
7.3 <sup>a</sup>	N-methyl-2-pyrrolidone; 1-methyl-2-pyrrolidone	872-50-4	212-828-1	Nitrogen containing heterocycles	Toxic for reproduction (article 57c)	Solvent used in leather industry  (concentration higher than 0,1% possible)
7.4	Hydrazine	302-01-2	206-114-9	Other substances	Carcinogenic (article 57a)	Basic chemical for synthesis  Not used in footwear or footwear components
7.5	Cobalt dichloride	7646-79-9	231-589-4	Substances containing cobalt	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
7.6 <sup>a</sup>	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	271-084-6	Phthalates	Toxic for reproduction (article 57c)	Theoretically possible  Practically never has been detected in footwear or footwear components
7.8	2-Ethoxyethyl acetate	111-15-9	203-839-2	Dihydroxy ethers	Toxic for reproduction (article 57c)	Solvent  volatile product, traces can be present only as a residue.
	See table 1 – 1.29					
<sup>a</sup> These substances are especially important for footwear and footwear components.						

Tabela 8: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Dezembro de 2011

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
8.1 <sup>a</sup>	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	140-66-9	205-426-2	Alkyl phenols and their ethoxylates	Toxic for reproduction (article 57c)	Used as surfactant in leather and textile industry Only low level residue will be expected (less than 0,1%)
8.2	2-Methoxyaniline; o-Anisidine	90-04-0	201-963-1	Aryl amine	Carcinogen, cat. 2	Not used as a free compound This substance can be detected after the degradation of azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
8.4	Calcium arsenate	7778-44-1	231-904-5	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
8.5	Trilead diarsenate	3687-31-8	222-979-5	Arsenic compounds	Carcinogenic (article 57a)	Not used in footwear or footwear components
8.8 <sup>a</sup>	Bis(2-methoxyethyl) phthalate	117-82-8	204-212-6	Phthalate	Toxic for reproduction (article 57c)	Possible (concentration higher than 0,1% possible)
8.9	N,N-dimethylacetamide (DMAC)	127-19-5	204-826-4	Amide	Carcinogenic (article 57a)	Solvent used in synthetic textile industry and in leather finishing Only low level residue will be expected (less than 0,1%)
8.11	Lead diazide; Lead azide	13424-46-9	236-542-1	Substances containing lead	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
8.12	Lead styphnate	15245-44-0	239-290-0	Substances containing lead	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components
8.17	Phenolphthalein	77-09-8	201-004-7	Aromatic hydrocarbons	Carcinogenic (article 57a)	Not used in footwear or footwear components
8.18	Aluminosilicate Refractory Ceramic Fibres	—	—	Refractory Ceramic Fibres	Carcinogenic (article 57a)	Not used in footwear or footwear components
8.19	Zirconia Aluminosilicate Refractory Ceramic Fibres	—	—	Refractory Ceramic Fibres	Carcinogenic (article 57a)	Not used in footwear or footwear components
8.20	Lead dipicrate	6477-64-1	229-335-2	Substances containing lead	Carcinogenic and toxic for reproduction (articles 57a and 57c)	Not used in footwear or footwear components



	See table 1 – 1.23
	See table 1 – 1.24
	See table 1 – 1.25
	See table 1 – 1.26
	See table 1 – 1.27
	See table 1 – 1.28
	See table 1 – 1.30
	See table 1 – 1.31
<sup>a</sup> These substances are especially important for footwear and footwear components.	



Tabela 9: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 18 de Junho de 2012

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
9.1	$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4-(phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	6786-83-0	229-851-8	colorant	Carcinogenic (Article 57a)	Complex mixture not used in footwear or footwear components  (However C.I. Solvent Blue 4 can be found in plastics, paper, paperboard)
9.2	1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione ( $\beta$ -TGIC)	59653-74-6	423-400-0		Mutagenic (Article 57b)	not used in footwear or footwear components
9.3	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	202-959-2		Carcinogenic (Article 57a)	not used in footwear or footwear components
9.4	Diboron trioxide	1303-86-2	215-125-8	Substances containing boron	Toxic reproduction for (Article 57 c)	not used in footwear or footwear components
9.5	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	203-977-3	solvent	Toxic reproduction for (Article 57 c)	Used as a solvent for certain dyes  Only low level residue will be expected (less than 0,1%)
9.6 <sup>a</sup>	Formamide	75-12-7	200-842-0		Toxic reproduction for (Article 57 c)	Possible at more than 0.1% for EVA materials
9.7	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)] (solvent violet 8)	561-41-1	209-218-2	colorant	Carcinogenic (Article 57a)	Complex mixture not used in footwear or footwear components  (However C.I. Solvent Blue 4 can be found in plastics, paper, paperboard)
9.8	Lead(II) bis(methanesulfonate)	17570-76-2	401-750-5	Substances containing lead	Toxic reproduction for (Article 57 c)	not used in footwear or footwear components

9.9	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	548-62-9	208-953-6	colorant	Carcinogenic (Article 57a)	Complex mixture not used in footwear or footwear components  (However C.I. Solvent Blue 4 can be found in plastics, paper, paperboard)
9.10	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	203-794-9	solvent	Toxic for reproduction (Article 57 c)	Used as a solvent for certain dyes  Only low level residue will be expected (less than 0,1%)
9.11	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) [with $\geq 0.1\%$ of Michler's ketone (EC No. 202-027-5) or Michler's base (EC No. 202-959-2)]	2580-56-5	219-943-6	colorant	Carcinogenic (Article 57a)	Complex mixture not used in footwear or footwear components  (However C.I. Basic Blue 26 can be found in textile)
9.12	1,3,5-Tris(oxiran-2-ylmethyl)-1,3,5-triazinane-2,4,6-trione (TGIC)	2451-62-9	219-514-3		Mutagenic (Article 57b)	not used in footwear or footwear components
9.13	4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	202-027-5		Carcinogenic (Article 57a)	not used in footwear or footwear components
a These substances are especially important for footwear and footwear components.						

Tabela 10: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 19 de Dezembro de 2012

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
10.1	Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9	247-094-1, 243-072-0, 256-356-4, 260-566-1		Equivalent level of concern having probable serious effects to human health (Article 57 f)	not used in footwear or footwear components
10.2	6-methoxy-m-toluidine (p-cresidine)	120-71-8	204-419-1	Aryl amine	Carcinogenic (Article 57a)	Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.3	Cyclohexane-1,2-dicarboxylic anhydride [1], cis-cyclohexane-1,2-dicarboxylic anhydride [2], trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry]	85-42-7, 13149-00-3, 14166-21-3	201-604-9, 236-086-3, 238-009-9		Equivalent level of concern having probable serious effects to human health (Article 57 f)	not used in footwear or footwear components
10.4	Pyrochlore, antimony lead yellow	8012-00-8	232-382-1	Substances containing lead	Toxic for reproduction (Article 57 c)	not used in footwear or footwear components
10.5	Henicosafuoroundecanoic acid	2058-94-8	218-165-4		vPvB (Article 57 e)	not used in footwear or footwear components
10.6	4-Aminoazobenzene	60-09-3	200-453-6	Aryl amine	Carcinogenic (Article 57a)	Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.7	Silicic acid, lead salt	11120-22-2	234-363-3	Substances containing lead	Toxic for reproduction (Article 57 c)	not used in footwear or footwear components

10.8	Lead titanium zirconium oxide	12626-81-2	235-727-4	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.9	Lead monoxide (lead oxide)	1317-36-8	215-267-0		Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.10	o-Toluidine	95-53-4	202-429-0	Aryl amine	Carcinogenic (Article 57a)		Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.11 <sup>a</sup>	3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	421-150-7		Toxic reproduction (Article 57 c)	for	Possible at more than 0.1% for Polyurethane materials
10.12 <sup>a</sup>	Dibutyltin dichloride (DBTC)	683-18-1	211-670-0	organotin	Toxic reproduction (Article 57 c)	for	Stabiliser or catalyst of polymers
10.13	Lead bis(tetrafluoroborate)	13814-96-5	237-486-0	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.14	Lead dinitrate	10099-74-8	233-245-9	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.15	Silicic acid (H <sub>2</sub> SiO <sub>5</sub> ), barium salt (1:1), lead-doped [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	272-271-5	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.16	Trilead bis(carbonate)dihydroxide	1319-46-6	215-290-6	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.17	4,4'-methylenedi-o-toluidine	838-88-0	212-658-8	Aryl amine	Carcinogenic (Article 57a)		Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.18	Diethyl sulphate	64-67-5	200-589-6		Carcinogenic (Article 57a); Mutagenic (Article 57b)		not used in footwear or footwear components



10.19	Dimethyl sulphate	77-78-1	201-058-1		Carcinogenic (Article 57a)	not used in footwear or footwear components
10.20a	N,N-dimethylformamide	68-12-2	200-679-5	solvent	Toxic reproduction (Article 57 c) for	Possible for PU coated material obtained by dipping  These material are rarely used in footwear
10.21a	4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	-	-	Surfactant	Equivalent level of concern having probable serious effects to the environment (Article 57 f)	used in the past in the textile industry see annex XVII of Reach can be found at residual levels
10.22a	4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	-	-	Surfactant	Equivalent level of concern having probable serious effects to the environment (Article 57 f)	used in the past in the textile industry see annex XVII of Reach can be found at residual levels
10.23	Furan	110-00-9	203-727-3	Solvent	Carcinogenic (Article 57a)	not used in footwear or footwear components
10.24	Lead oxide sulfate	12036-76-9	234-853-7	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.25	Lead titanium trioxide	12060-00-3	235-038-9	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.26	Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	214-604-9	Brominated flame retardant	PBT (Article 57 d); vPvB (Article 57 e)	not used in footwear or footwear components
10.27	Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	201-861-7	pesticide	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.28	1,2-Diethoxyethane	629-14-1	211-076-1	solvent	Toxic reproduction (Article 57 c) for	Used as a solvent for leather finishing Only low level residue will be expected (less than 0,1%)
10.29	N-methylacetamide	79-16-3	201-182-6	solvent	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.30	Tetralead trioxide sulphate	12202-17-4	235-380-9	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.31	Acetic acid, lead salt, basic	51404-69-4	257-175-3	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.32	[Phthalato(2-)]dioxotrilead	69011-06-9	273-688-5	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components

10.33	Tetraethyllead	78-00-2	201-075-4	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.34 <sup>2</sup>	N-pentyl-isopentylphthalate	776297-69-9	-	phthalates	Toxic reproduction (Article 57 c)	for	Possible (concentration higher than 0,1% possible)
10.35	Pentalead tetraoxide sulphate	12065-90-6	235-067-7	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.36	Heptacosafuorotetradecanoic acid	376-06-7	206-803-4		vPvB (Article 57 e)		not used in footwear or footwear components
10.37	Tricosafuorododecanoic acid	307-55-1	206-203-2		vPvB (Article 57 e)		not used in footwear or footwear components
10.38	1-bromopropane (n-propyl bromide)	106-94-5	203-445-0		Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.39	Dioxobis(stearato)trilead	12578-12-0	235-702-8	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.40	Pentacosafuorotridecanoic acid	72629-94-8	276-745-2		vPvB (Article 57 e)		not used in footwear or footwear components
10.41	Methoxyacetic acid	625-45-6	210-894-6		Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.42	Methyloxirane (Propylene oxide)	75-56-9	200-879-2		Carcinogenic (Article 57a); Mutagenic (Article 57b)		not used in footwear or footwear components
10.43	Trilead dioxide phosphonate	12141-20-7	235-252-2	Substances containing lead	Toxic reproduction (Article 57 c)	for	not used in footwear or footwear components
10.44	o-aminoazotoluene	97-56-3	202-591-2	Aryl amine	Carcinogenic (Article 57a)		Not used as a free compound This substance can be detected after the degradation of :azo colorant, (see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.45	4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	202-453-1	Aryl amine	Carcinogenic (Article 57a)		Not used as a free compound This substance can be detected after the degradation of :azo colorant, (see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)



10.46 <sup>a</sup>	Diisopentylphthalate	605-50-5	210-088-4	phthalate	Toxic reproduction (Article 57 c) for	Possible (concentration higher than 0,1% possible)
10.47 <sup>a</sup>	1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	284-032-2	phthalate	Toxic reproduction (Article 57 c) for	Possible (concentration higher than 0,1% possible)
10.48	Biphenyl-4-ylamine	92-67-1	202-177-1	Aryl amine	Carcinogenic (Article 57a)	Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.49	Fatty acids, C16-18, lead salts	91031-62-8	292-966-7	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.50	Orange lead (lead tetroxide)	1314-41-6	215-235-6	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.51	4,4'-oxydianiline and its salts	101-80-4	202-977-0	Aryl amine	Carcinogenic (Article 57a); Mutagenic (Article 57b)	Not used as a free compound This substance can be detected after the degradation of :azo colorant, see annex XVII of Reach) Only low level residue will be expected (less than 0,1%)
10.52	Diazene-1,2-dicarboxamide (C,C'-azodi(formamide))	123-77-3	204-650-8		Equivalent level of concern having probable serious effects to human health (Article 57 f)	Blowing agent for foam Only low level residue will be expected (less than 0,1%)
10.53	Sulfurous acid, lead salt, dibasic	62229-08-7	263-467-1	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
10.54	Lead cyanamidate	20837-86-9	244-073-9	Substances containing lead	Toxic reproduction (Article 57 c) for	not used in footwear or footwear components
<sup>a</sup> These substances are especially important for footwear and footwear components.						

Tabela 11: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 20 de Junho de 2013

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
11.1 <sup>a</sup>	Cadmium	7440-43-9	231-152-8	Substances containing cadmium	Carcinogenic (Article 57a); Equivalent level of concern having probable serious effects to human health (Article 57 f)	Possible  See annex XVII of Reach  (concentration higher than 0,1% possible)
11.2	Cadmium oxide	1308-19-0	215-146-2	Substances containing cadmium	Carcinogenic (Article 57a); Equivalent level of concern having probable serious effects to human health (Article 57 f)	not used in footwear or footwear components
11.3a	Dipentyl phthalate (DPP)	131-18-0	205-017-9	phthalate	Toxic reproduction for (Article 57 c)	Possible  (concentration higher than 0,1% possible)
11.4a	4-Nonylphenol, branched and linear, ethoxylated [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering UVCB- and well-defined substances, polymers and homologues, which include any of the individual isomers and/or combinations thereof]	-	-	surfactant	Equivalent level of concern having probable serious effects to the environment (Article 57 f)	used in the past in the textile industry see annex XVII of Reach  can be found at residual levels
11.5	Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	223-320-4		Toxic reproduction for (Article 57 c); PBT (Article 57 d)	Used for the substitution of PFOS  Rarely level higher than 0,1%
11.6	Pentadecafluorooctanoic acid (PFOA)	335-67-1	206-397-9		Toxic reproduction for (Article 57 c); PBT (Article 57 d)	Used for the substitution of PFOS  Rarely level higher than 0,1%
<sup>a</sup> These substances are especially important for footwear and footwear components.						

Tabela 12: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 16 de Dezembro de 2013

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
12.1	Cadmium sulphide	1306-23-6	215-147-8	pigment	Carcinogenic (Article 57a)	Pigment for polymers and synthetic textiles Preservative for certain polymers
12.2a	Colorant C.I. Direct Red 28	573-58-0	209-358-4	colorant	Carcinogenic (Article 57a)	Use in leather, textile and polymer (can release aromatic amines concerned by Reach annex XVII)
12.3a	Colorant C.I. Direct Black 38	1937-37-7	217-710-3	colorant	Carcinogenic (Article 57a)	Use in leather, textile and polymer (can release aromatic amines concerned by Reach annex XVII)
12.4a	Dihexyl phthalate	84-75-3	201-559-5	Phthalate	Toxic for reproduction (Article 57 c)	Possible (concentration higher than 0,1% possible)
12.5	Imidazolidine-2-thione (2-imidazoline-2-thiol)	96-45-7	206-104-4		Toxic for reproduction (Article 57 c)	Vulcanization accelerator of rubber
12.6	Lead di(acetate)	301-04-2	206-104-4	Substances containing lead	Toxic for reproduction (Article 57 c)	Possible in certain paintings
12.7	Trixylyl phosphate	25155-23-1	246-677-8	Flame retardant	Toxic for reproduction (Article 57 c)	Flame retardant for polymer and textile
<sup>a</sup> These substances are especially important for footwear and footwear components.						

Tabela 13: Identificação das substâncias altamente perigosas, incluídas na lista candidata do anexo XVI do REACH – Data de inclusão 16 de Junho de 2014

ID	Substance name	CAS Number	EC Number	Group	Reason for inclusion	Occurrence in Footwear
13.1 <sup>a</sup>	1,2-Benzenedicarboxylic acid, dihexyl ester, branched and linear	68515-50-4	271-093-5	Phthalate	Toxic for reproduction (Article 57 c)	Possible (concentration higher than 0,1% possible)
13.2	Sodium perborate; perboric acid, sodium salt	-	239-172-9; 234-390-0	Substances containing boron	Toxic for reproduction (Article 57 c)	Not used in footwear or footwear components (leather: possible traces, use for the preservation of raw hides)
13.3a	Sodium peroxometaborate	7632-04-4	231-556-4	Substances containing boron	Toxic for reproduction (Article 57 c)	Not used in footwear or footwear components (leather: possible traces, use for the preservation of raw hides)
13.4a	Cadmium chloride	10108-64-2	233-296-7	Substances containing cadmium	Carcinogenic (Article 57a); Mutagenic (Article 57b); Toxic for reproduction (Article 57c); Equivalent level of concern having probable serious effects to human health (Article 57 f)	Pigment for polymers and synthetic textiles Preservative for PVC
<sup>a</sup> These substances are especially important for footwear and footwear components.						