

NTS 317: APPENDIX – GUIDANCE

REACH – The Need for Candidate List Substance Declaration

Candidate List Customer Declaration (Article 33)

Any supplier of an Article containing a Candidate List substance as identified on the ECHA web-site must provide the recipient with information of any candidate list substances >0.1% weight, including the substance name used to allow safe use of the article. This obligation falls upon the importer into European Economic Area (EEA) or the manufacturer in the EEA of the Article. An article may be a final product, an assembly or a part.

The legal obligation falls upon all companies in the EEA manufacturing or handling articles, and also as a business requirement on suppliers of products from outside the EEA to support the obligations of downstream EEA importers. Product integrators such as Rolls-Royce need this information to provide declarations based on the sum total of the articles in our products.

Notification

The producer (importer into the EEA or the manufacturer) must notify ECHA of Candidate List SVHCs where they are manufactured or imported in articles >0.1% and the total for the producer across all articles exceeds 1 tonne per annum, unless exposure to the users or environment can be excluded under normal or reasonably foreseeable circumstances including disposal or the specific substance has been registered for the given use.

Rolls-Royce, or our customers therefore need to track the total volume of SVHCs against production or sales volume. A weight for each article and a percentage for a given SVHC in that article is consequently needed in order to calculate total SVHC use.

Authorisation (Articles 56 and 58)

Application for Authorisation for continued use is required if the candidate list substance is subsequently added to Annex XIV of REACH. Articles containing substances on Annex XIV may not be marketed or used in the European Economic Area after a sunset date specified in Annex XIV unless authorised, and then only in compliance with risk control measures identified in the authorisation.

An authorisation application must include substitution planning information if viable alternatives exist, as well as risk control measures. Preparation of such an application therefore requires knowledge of the presence of candidate list substances in our products. Authorisations are subject to periodic review.

Due to the nature of our industry including applicable industry regulations, a substitution plan may have significant business impact over a significant period of time. Previous experience of such substitutions such as with Asbestos demonstrates the need for effective management information.

Guidance Notes for Current and Proposed Candidate List Substances

Substance / Material Name / CAS # / Guide Notes

Contents of June 2010 Candidate List (38 substances):

Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) / 85535-84-8. Dangerous for the Environment. Risk phrase R40, 50, 53. Used in lubricants and additives, in cutting oils and additives, among others. One application for chlorinated paraffin's is as a plasticizer. Chlorinated paraffins are also used as plasticizers in paint, sealants and adhesives where the main advantages over alternatives are their inertness and the enhancement of flame retardant properties. Higher chlorine content grades are used as flame-retardants in a wide range of rubbers and polymers systems, where they are often used in preference to potentially more toxic phosphate and bromine-based additives. The other major outlet for chlorinated paraffins is in the formulation of metalworking lubricants where they have long been recognized as one of the most effective additives for lubricants used in a wide range of machining and engineering operations.

Anthracene / 120-12-7 / A coal tar distillate. Anthracene is a colorless, crystalline product of composition C₆H₄:(C₂H₂):C₆H₄ and melting point 217C used for the production of dyes, resins, plasticizers, tanning agents and inhibitors. Crystals of anthracene are used for scintillation counters for gamma-ray detection. Contained as component of complex mixtures in products containing coal tar distillates. It is also a residue of incomplete combustion. Can be easily found in waste coming from foundries, together with other polycyclic aromatic hydrocarbons.

Benzyl butyl phthalate / 85-68-7. Plasticizer of PVC (95%), also used in paints, laquers and varnishes. BBzP is commonly used as a plasticizer for vinyl foams, which are often used as floor tiles. Other uses are in traffic cones, food conveyor belts, and artificial leather.

Bis (2-ethyl(hexyl)phthalate) (DEHP) (Dioctyl Phthalate) / 117-81-7. Due to its suitable properties and the low cost, DEHP is widely used as a plasticizer in manufacturing of articles made of PVC.[1] Plastics may contain 1% to 40% of DEHP. It is also used as a hydraulic fluid and as a dielectric fluid in capacitors. DEHP also finds use as a solvent in lightsticks. Among other uses, is used in lubricants and additives.

Bis(tributyltin)oxide / 56-35-9 / Biocide. Considered highly toxic for the aquatic environment

Cobalt dichloride / 7646-79-9. Was widely used as a moisture indicator (discontinued due to carcinogenicity), and as a color pigment.

4,4'- Diaminodiphenylmethane / 101-77-9. Used in the polymer and adhesive industry. Used as an epoxy resin hardener.

Dibutyl phthalate / 84-74-2. Commonly used as a plasticizer. Plasticizers are additives that increase the plasticity or fluidity of the material to which they are added, these include plastics, cement, concrete, wallboard and clay bodies. Although the same compounds are often used for both plastics and concretes, the desired effect is slightly different. It is also used as an additive to adhesives or printing inks. Heavily used in printing on surface mount electronic components (i.e. thick film resistors). Suspected endocrine disruptor, commonly used as a plasticizer.

Diarsenic pentaoxide / 1303-28-2 . Use as a pesticidal fumigant. Agricultural use.

Diarsenic trioxide / 1327-53-3. Raw material used in the manufacture of certain arsenic-based pesticides and pharmaceuticals, but also can be used for decolorizing agent for glasses and enamels; Preservative for wood; and preparation of elemental arsenic, arsenic alloys and arsenide semiconductors. Carcinogenic, cat. 1. Used as starting point for pesticides and pharmaceuticals, among others.

Hexabromocyclododecane (HBCDD) | 25637-99-4 / Brominated flame retardant. A widely used flame retardant in polymer and textile industry.

Lead hydrogen arsenate / 7784-40-9 / Insecticide. An inorganic insecticide used primarily against the potato beetle.

Sodium dichromate, dihydrate / 7789-12-0. Chromium (VI) compounds are often used as pigments for photography, and in pyrotechnics, dyes, paints, inks, and plastics. They can also be used for stainless steel production, textile dyes, wood preservation, leather tanning, and as anti-corrosion and conversion coatings. They are used as corrosion inhibitors, but due to their high levels of toxicity they are being replaced by alternatives. Confirmed human carcinogen. Use beyond chemistry (benzylic and allylic bond oxidation), are listed in the Annex XIV report (chrome plating, pigments).

5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene) / 81-15-2. Used in fragrance industry.

Triethyl arsenate / 15606-95-8. Used in the fabrication of integrated circuits (also known as IC, microcircuit, microchip, silicon chip, or chip) is a miniaturized electronic circuit (consisting mainly of semiconductor devices, as well as passive components) that has been manufactured in the surface of a thin substrate of semiconductor material.

Anthracene oil/ 90640-80-5; Anthracene oil, anthracene paste,distn. Lights/ 91995-17-4; Anthracene oil, anthracene paste, anthracene fraction / 91995-15-2; Anthracene oil, anthracene-low / 90640-82-7; Anthracene oil, anthracene paste/90640-81-6.

The five above substances are mainly used in the manufacture of other substances such as anthracene and carbon black. They may also be used as reducing agents in blast furnaces, as components in bunker fuel, for impregnating, sealing and corrosion protection.

Pitch, coal tar, high temp./ 65996-93-2. Used mainly used in the production of electrodes for industrial applications. Smaller volumes are dedicated to specific uses such as heavy-duty corrosion protection, special purpose paving, and manufacture of other substances and the production of clay targets.

Acrylamide / 79-06-1. Used almost exclusively used for the synthesis of polyacrylamides, which are used in various applications, in particular in waste water treatment and paper processing. Minor uses of acrylamide comprise the preparation of polyacrylamide gels for research purposes and as a grouting agent in civil engineering

Trichloroethylene / 79-01-6. Used for cleaning and degreasing of metals parts, solvent in adhesives and intermediate in manufacture of chlorinated and fluorinated compounds.

Boric Acid / 10043-35-3 / 11113-50-1. Uses include a multitude of applications e.g. in biocides and preservatives, personal care products, food additives, glass, ceramics, detergents and cleaners, rubber, flame retardants, paints, industrial fluids, brake fluids, soldering products and film developers.

Disodium Tetraborate anhydrous / 1330-43-4 / 12179-04-3 / 1303-96-4. Uses include a multitude of applications including applications, eg) Glass and glass fibres, ceramics, detergents and cleaners, personal care products, industrial fluids, metallurgy, adhesives, flame retardants, biocides and fertilizers.

Tetaboron disodium heptaoxide hydrate / 12267-73-1. Uses include of multitude of applications eg) in glass and glass fibres, ceramics, detergents and cleaners, personal care products, industrial fluids, metallurgy, adhesives, flame retardants, biocides and fertilizers.

Sodium Chromate / 7775-11-3. Uses include laboratory agent and manufacture of other chromium compounds.

Potassium Chromate / 7789-00-6. Uses include treatment and coating of metals, manufacture of reagents and chemicals, tanning and dressing of leather products.

Ammonium dichromate / 7789-09-5. Uses include manufacture of photosensitive screens, metal treatment and as an oxidizing agent.

Potassium Dichromate / 7778-50-9. Uses include chrome metal manufacture and treatment and coating of metals, photolithography, corrosion inhibitors.

Aluminosilicate Refractory Ceramic Fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008, conditions:

a) Al₂O₃ and SiO₂ are present within the following concentration ranges: Al₂O₃: 43.5 – 47 % w/w, and SiO₂: 49.5 – 53.5 % w/w, or Al₂O₃: 45.5 – 50.5 % w/w, and SiO₂: 48.5 – 54 % w/w, b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (µm).

Used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).

Zirconia Aluminosilicate, Refractory Ceramic Fibres, covered by index number 650-017-00-8 in Annex VI, part 3, table 3.2 of Regulation (EC) No 1272/2008, and fulfil the two following conditions: a) Al₂O₃, SiO₂ and ZrO₂ are present within the following concentration ranges: Al₂O₃ : 35 – 36 % w/w, and SiO₂ : 47.5 – 50 % w/w, and ZrO₂ : 15 - 17 % w/w, b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometers (µm).

Used for high-temperature insulation, almost exclusively in industrial applications (insulation of industrial furnaces and equipment, equipment for the automotive and aircraft/aerospace industry) and in fire protection (buildings and industrial process equipment).

2,4-Dinitrotoluene / 121-14-2. Used in the production of toluene diisocyanate, which is used for the manufacture of flexible polyurethane foams. The substance is also used as gelatinizing-plasticizing agent for the manufacture of explosive mixtures (e.g. for airbags in cars).

Diisobutyl phthalate / 84-69-5. Used as plasticizer for nitrocellulose, cellulose ether, polyacrylate and polyacetate dispersions, and as a gelling aid in combination with other plasticizers, which are widely used for plastics, lacquers, adhesives, explosive material and nail polish.

Lead chromate / 7758-97-6. Used for manufacturing pigments and dyes, as a pigment or coating agent in industrial and maritime paint products or for embalming/restoring of art products. Further potential uses include as detergents and bleaches, photosensitive materials.

Lead chromate molybdate sulphate red (C.I. Pigment Red104) / 12656-85-8. Used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting.

Lead sulfochromate yellow (C.I.Pigment Yellow 34) / 1344-37-2. Used as a colouring, painting and coating agent in sectors such as the rubber, plastic and paints, coatings and varnishes industries. Applications comprise the production of agricultural equipment, vehicles and aircraft as well as road and airstrip painting. The substance is further used for camouflage or ammunition marking in the defence area.

Tris(2-chloroethyl)phosphate / 115-96-8. Mainly used as an additive plasticiser and viscosity regulator with flame-retarding properties for acrylic resins, polyurethane, polyvinylchloride and other polymers. Other fields of application are adhesives, coatings, flame resistant paints and varnishes. The main industrial branches to use TCEP are the furniture, the textile and the building industry.

Additions to 15 December 2010 Candidate List (additional 8 substances):

2-Ethoxyethanol / 110-80-5. The main proportion (80 %) is processed to intermediates for use in chemical industry. The smaller part (20 %) is used as industrial solvent. Previously the substance was widely used in open systems, such as paints for private use, in surface treatment of metals and in repair industry. Also used for the formulation of paints, lacquers, varnishes and printing inks. According to industry there is no remaining wide dispersive use outside the chemical industry.

2-Methoxyethanol / 109-86-4. Wide application as a solvent, chemical intermediate and solvent coupler of mixtures and water-based formulations. Use has declined, however, in recent years as a result of its classification and consequent replacement by other substances in some countries.

Chromic acid / 7738-94-5 and Oligomers of chromic acid and dichromic acid, Dichromic acid / 13530-68-2. Intermediates in chromium plating, also used in ceramic glazes, and coloured glass.

Chromium trioxide / 1333-82-0. Mainly used in chrome-plating. Typically it is employed with additives that affect the plating process but do not react with the trioxide. The trioxide reacts with cadmium, zinc, and other metals to generate passivating chromate films that resist corrosion.

Cobalt(II) carbonate / 513-79-1. Starting material in the manufacture of other chemicals, such as cobalt oxide, cobalt pigments and cobalt salts (for example cobalt difluoride is prepared commercially by the reaction of cobalt(II) carbonate with anhydrous hydrogen fluoride.)

Cobalt (II) diacetate / 71-48-7. Used in surface treatments such as anodizing of alloys, particularly hard metals.

Cobalt (II) dinitrate / 10141-05-6. Surface treatments: Anodizing, Electro-deposition, Non-electro-deposition.

Cobalt (II) sulphate / 10124-43-3. Surface treatments: anodizing, electrodeposition, non-electro-deposition, Corrosion prevention.

Additions to 20 June 2011 Candidate List (additional 7 substances):

1, 2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich / 71888-89-6. Manufacturing of DIHP in the EU stopped some time ago. The main reported uses of DIHP were as a Plasticiser in PVC or as a Plasticiser in sealants and printing inks.

1, 2,3-Trichloropropane / 96-18-4. Used primarily as a chemical intermediate in the production of polysulfone liquid polymers, dichloropropene, and hexafluoropropylene, and as a cross-linking agent in the synthesis of polysulfides (ATSDR 1992).

1-Methyl-2-pyrrolidone / 872-50-4. Used as a solvent for paint stripping and resins; cleaner for polymeric residues; metal finishing; printed circuit board manufacturing; SBR latex production; extraction of acetylene and butadiene; dehydration of natural gas; lube oil processing; as intermediate for the synthesis of agrochemicals, pharmaceuticals, textile auxiliaries, plasticizers, stabilizers; pigment dispersant.

Hydrazine / 302-01-2 / 7803-57-8. Used as a high-energy rocket propellant, as a reactant in military fuel cells, in nickel plating, in the polymerization of urethane, for removal of halogens from wastewater, as an oxygen scavenger in boiler feedwater to inhibit corrosion, and in photographic development.

1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP) / 68515-42-4. Principally used as a plasticiser for PVC (polyvinyl chloride) which has been used in a variety of applications such as industrial, automotive, and construction materials.

Strontium chromate / 7789-06-2. Used as rust- and corrosion-resistant pigment in paints, varnishes and oil colours. It is used in water based wash primers, metal conditioners or in aluminium flake coatings, either alone or in combination with basic zinc chromate (solvent and vinyl based wash primer). Strontium chromate has also been used as an additive to control the sulphate content of solutions in electrochemical processes.

2-Ethoxyethyl acetate / 111-15-9. Used as a solvent in some paints, coatings and adhesives, as well as in some wood stains and varnishes. It is also used as an industrial solvent and in automobile lacquers to retard evaporation and impart high gloss.