

**1 September 2014**

## **Draft background document for Coal tar pitch, high temperature**

### **Document developed in the context of ECHA's sixth Recommendation for the inclusion of substances in Annex XIV**

*ECHA is required to regularly prioritise the substances from the Candidate List and to submit to the European Commission recommendations of substances that should be subject to authorisation. This document provides background information on the prioritisation of the substance, as well as on the determination of its draft entry in the Authorisation List (Annex XIV of the REACH Regulation). Information comprising confidential comments submitted during public consultation, or relating to content of Registration dossiers which is of such nature that it may potentially harm the commercial interest of companies if it was disclosed, is provided in a confidential annex to this document.*

## **1. Identity of the substance**

Chemical name: Coal tar pitch, high temperature

EC Number: 266-028-2

CAS Number: 65996-93-2

IUPAC Name: Not applicable

## **2. Background information for prioritisation**

*Priority was assessed by using the General approach for prioritisation of SVHCs for inclusion in the list of substances subject to authorisation<sup>1</sup>. Results of the prioritisation of all substances included in the Candidate List on 20 June 2013 or before and not yet included or recommended in Annex XIV of the REACH Regulation is available at [http://echa.europa.eu/documents/10162/13640/prioritisation\\_results\\_6th\\_rec\\_en.pdf](http://echa.europa.eu/documents/10162/13640/prioritisation_results_6th_rec_en.pdf)*

### **2.1. Intrinsic properties**

Coal tar pitch, high temperature (CTPHT) was identified as a Substance of Very High Concern (SVHC) according to article 57 a, d and e of Regulation (EC) No 1907/2006 (REACH) and was therefore included in the Candidate List for authorisation on 13 January 2010, following ECHA's decision ED/68/2009.

CTPHT is classified in Annex VI, part 3, Table 3.1 (the list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008 as Carcinogenic, Category 1B, H350 ("May cause cancer").

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<sup>1</sup> Document can be accessed at

[http://echa.europa.eu/documents/10162/13640/gen\\_approach\\_svhc\\_prior\\_in\\_recommendations\\_en.pdf](http://echa.europa.eu/documents/10162/13640/gen_approach_svhc_prior_in_recommendations_en.pdf)

In addition, on the basis of the PBT and vPvB properties of some of its PAH-constituents, CTPHT fulfils the PBT and the vPvB criteria according to article 57 d and e of the REACH Regulation.

## 2.2. Volume used in the scope of authorisation

The amount of CTPHT manufactured and imported into the EU is according to registration data in the range of 1,000,000 - 10,000,000 t/y.

Some uses appear not to be in the scope of authorisation, such as uses as intermediate.

Based on available information regarding the volume for uses outside the scope of authorisation, the volume in the scope of authorisation is still in the same range as the total volume in the EU > 10,000 t/y.

## 2.3. Wide-dispersiveness of uses

Registered uses of CTPHT in the scope of authorisation include:

- uses at industrial sites (as binding agent in the manufacture of anodes/electrodes in the metal industry - aluminium, metallurgic smelting, electro steel - , in refractories and for clay pigeons and as anti-corrosion agent in (specialty) coatings, paints and adhesives), and
- uses by professional workers (binding agent for clay pigeons and as anti-corrosion agent in (specialty) coatings, paints and adhesives).

Furthermore, according to registrations and the Annex XV report (2009) the substance is used in articles (e.g. clay targets, metal articles, articles related to the use in paints and adhesives, etc.) in volumes > 10 t/y.

## 2.4. Conclusions and justification

Verbal descriptions and Scores			Total Score
Inherent properties (IP)	Volume (V)	Wide dispersiveness of uses (WDU)	(= IP + V + WDU)
CTPHT is classified as carcinogenic Cat. 1B and it is identified as PBT and vPvB (meeting the criteria 57 a, d and e)  Score: 15	The amount of CTPHT used in the scope of authorisation is > 10,000 t/y.  Score: 15	CTPHT is used at industrial sites and by professional workers.  Initial score: 10  Furthermore, the substance is used in articles in volumes > 10 t/y.  Refined score: 12	42

### Conclusion

On the basis of the prioritisation criteria, CTPHT received high priority among the substances in the Candidate List (refer to link to the prioritisation results above). Therefore, it is proposed to

recommend CTPHT for inclusion in Annex XIV.

### 3. Further information on uses

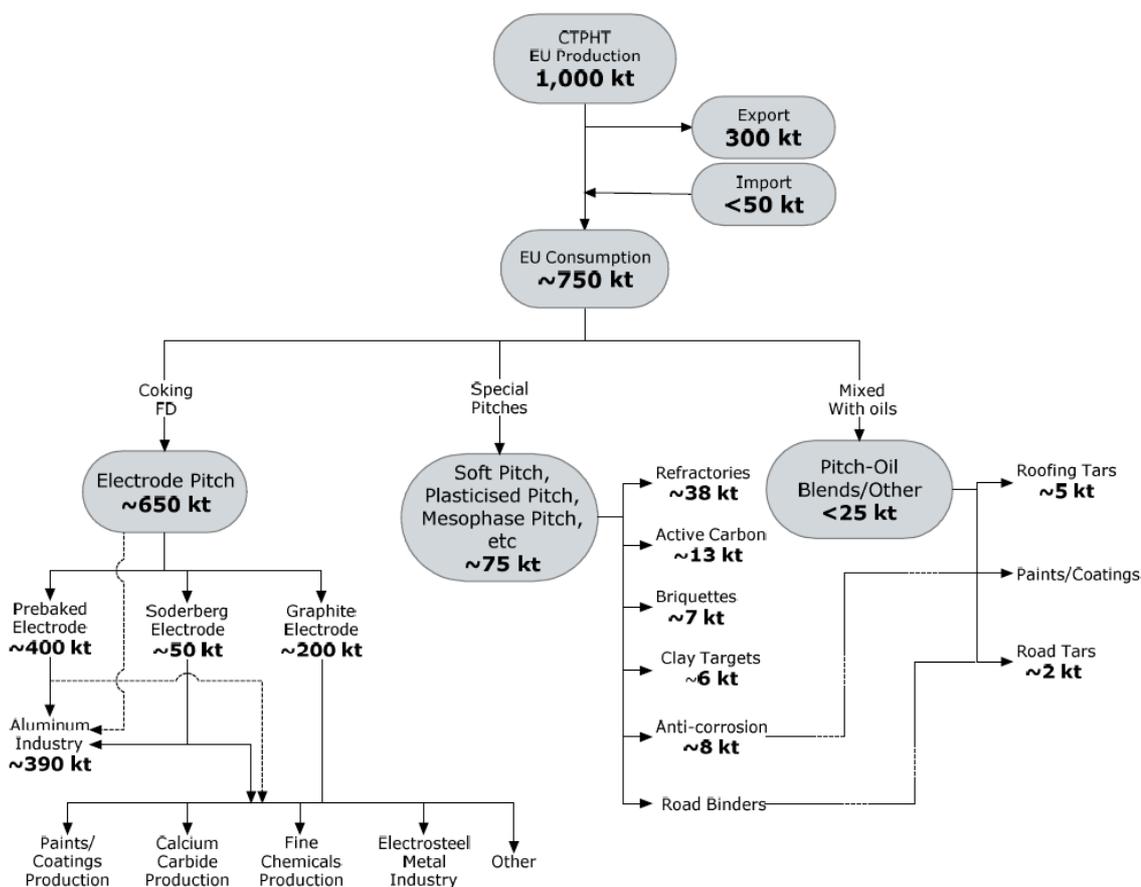
The exact number of sites of use of CTPHT in the EU is unknown. However, given the very high volume used in its different applications, the number of sites of use of CTPHT in the EU is expected to be high.

Based on registration information, there are ca. thirty manufacturers and importers of CTPHT in the EU located in Denmark, the United Kingdom, the Netherlands, Czech Republic, Belgium, Poland, Germany, Spain, Norway, Italy, France and Romania.

According to the comments received during public consultation on the SVHC identification of the substance, 12 sites in the EU are involved in the production of prebaked anodes in the aluminium industry (RCOM, 2009).

As far as the complexity of supply chains is concerned, it appears that, depending on the specific uses of CTPHT, they can be rather simple (i.e. with rather limited number of levels, of parallel supply strands and/or number of actors) to rather complex, mainly when involving either different industry sectors or a high number of actors (Annex XV report, 2009).

Figure 1 below shows a mass flow diagram of the uses of CTPHT. It is taken from the 2009 Annex XV report. In terms of trends discussed in 2009, the following aspects are still considered relevant.



### Figure 1: Mass flow diagram of the uses of CTPHT (Annex XV report, 2009)

The main use of CTPHT is as a binding agent in the **production of electrodes** (whether anodes, cathodes or graphite electrodes) which are mainly used in the production of primary metals, ferro-alloys, non-ferrous metals, metal alloys, calcium carbide and silicon carbide (Annex XV report, 2009).

There are three main types of electrodes, which are produced using different processes, contain different levels of CTPHT and are used in varying applications:

- Söderberg electrodes;
- prebaked electrodes;
- graphite electrodes.

CTPHT is used in coatings **products for anti-corrosion protection**. For heavy duty corrosion protection and application as sealing compounds, a further increase in the plasticity range is achieved by hot-mixing these pitches with extenders such as finely ground coal, minerals, diatomaceous earth, or fly ash. To meet especially high anti-corrosion requirements, coal tar pitches are combined with polymers. Such pitch-polymer combinations may consist of two-pack systems with epoxy or polyurethane or one-pack systems with other polymers or elastomers (Annex XV report, 2009).

**Refractories** are materials that maintain sufficient physical and chemical stability to be used for structural purposes in high temperature environments encountered in the process industries. They provide linings for high-temperature furnaces and other processing units and by definition are expected to be able to withstand physical wear, mechanic stress and strain, corrosion by chemical agents and high temperatures (above 500°C). CTPHT is used as a binder which, when added to a refractory mix, holds the various aggregates and matrix particles together (thereby contributing to the refractory products' strength) in a form that can be handled with minimum breakage (Annex XV report, 2009).

The RAR identifies the 'production of active carbon' as one of the uses of CTPHT (Annex XV report, 2009).

**Activated carbon** can be found in a variety of applications including: air treatment, drinking water treatment, effluent water treatment, food processing, industrial processes (purification and catalysis), medical uses (charcoal cloth, masks), military and industrial respirators and a number of other applications. Activated carbon is also available in special forms such as cloth and fibres.

CTPHT is a conventional binder used for making coal **briquettes**, where briquettes are essentially combustible fuel materials which can be used for domestic (e.g. heating and barbeques) or industrial heating. The shape and size of the briquettes depend essentially on their intended application (i.e. domestic or industrial); however, the binder may be around 5-12% of the overall mixture.

CTPHT is used as a binding agent in **clay targets** (previously known as "clay pigeons") which are designed as flying (saucer-shaped) targets for sports shooters and small game hunters to practice on, or in actual sports. The targets are flung into the air to create moving targets to shoot at; they must, therefore, be able to withstand the stress of transportation and being thrown from traps at very high speeds while also disintegrating readily when hit by a pellet (Annex XV report, 2009). Clay targets are made to very exacting specifications with regard to their weight and dimensions and are required to conform to international standards.

## 4. Background information for the proposed Annex XIV entry

*Draft Annex XIV entries were determined on the basis of the General approach for preparation of draft Annex XIV entries for substances to be included in Annex XIV<sup>2</sup>. The draft Annex XIV entries for substances included in this draft recommendation are available at [http://echa.europa.eu/documents/10162/13640/draft\\_axiv\\_entries\\_summarytable\\_6th\\_en.pdf](http://echa.europa.eu/documents/10162/13640/draft_axiv_entries_summarytable_6th_en.pdf) The section below provides background for allocation of the substance to the Latest Application*

The LAD slots are set in 3 months intervals (i.e. 18, 21 and 24 months after inclusion in Annex XIV). Anthracene oil and coal tar pitch high temperature have been considered to be placed in the same slot as they may fulfil the definition of a group according to section 1.5 of Annex XI of REACH (provision allowing submitting common applications for authorisation).

Allocation of (group of) substances to LAD slots aims at an even workload for all parties during the opinion forming and decision making on the authorisation applications. All substances can therefore not be set at the same LAD, however, the time differences between the LADs set out in a recommendation (i.e. 3-6 months) can be considered as minor compared to the total time reserved for the potential applicants to prepare their applications.

Based on rough indicators (such as the number of registered uses within the scope of authorisation, number of registrants, and number and type of SVHC endpoints), processing of applications is anticipated to be of higher workload in particular for three groups of substances among the substances included in the draft 6th recommendation. Those groups, comprising the two above coal-stream-substances, lead-substances, and borates, are therefore proposed to be allocated at separate LAD slots.

For anthracene oil and coal tar pitch high temperature, although the supply chain is not simple, preparation of an application may still require shorter time in comparison with the other, probably higher (overall) supply chain complexity, groups. Therefore these substances are assigned in the 1st slot.

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<sup>2</sup> Document can be accessed at [http://echa.europa.eu/documents/10162/13640/draft\\_axiv\\_entries\\_gen\\_approach\\_6th\\_en.pdf](http://echa.europa.eu/documents/10162/13640/draft_axiv_entries_gen_approach_6th_en.pdf)

## 5. References

Annex XV report (2009): Proposal for identification of a substance as a CMR, PBT, vPvB or a substance of an equivalent level of concern. Coal tar pitch, high temperature Submitted by ECHA on behalf of the Commission, August 2009. <http://echa.europa.eu/documents/10162/8b23f02f-452d-459b-a043-76cba8104dbe>

RCOM (2009): "*Responses to comments*" document. Document compiled by ECHA from the commenting period 31/08/2009-15/10/2009 on the proposal to identify Coal tar pitch, high temperature as a Substance of Very High Concern. <http://echa.europa.eu/documents/10162/661eb91f-329f-40a7-be8c-30d5494014ee>