

# Proposed Control of Polychlorinated Naphthalenes (PCN) and Trichlorfon in Singapore

## Introduction

The National Environment Agency (NEA) of Singapore is proposing to control polychlorinated naphthalenes (PCN) and trichlorfon as Hazardous Substances (HS) under the Environmental Protection and Management Act (EPMA) and EPM (Hazardous Substances) Regulations, and to phase-out the production, import, export and use of PCN by May 2018.

## Polychlorinated Naphthalenes (PCN)

2 The Stockholm Convention on Persistent Organic Pollutants (POPs) is a global treaty to protect human health and the environment from POPs. POPs are chemicals that remain intact in the environment for long period of time, can be widely distributed geographically, accumulate in the fatty tissues of humans and wildlife, and have harmful impacts on human health or the environment.

3 PCN is a POP, which is found in cable insulation, wood preservatives, rubber and plastic additives, and in capacitors. According to reports published on the Stockholm Convention website, the intentional production of PCN has already ended. It was also reported in these reports, as well as publications from developed countries that the use of PCN has been substituted by alternatives which are already in use.

4 Notwithstanding, PCN can be unintentionally produced during incineration or high-temperature industrial processes. The existing measures to control dioxins and furans emissions to ensure that they fall within the stipulated limits (i.e. 0.1 ng TEQ/Nm<sup>3</sup> for waste incinerators commissioned on or after 1 Jan 2001, 1.0 ng TEQ/Nm<sup>3</sup> for waste incinerators commissioned before 1 Jan 2001) under the EPM (Air Impurities) Regulations will also mitigate PCN emissions.

5 At the 7<sup>th</sup> Meeting of the Conference of Parties of the Stockholm Convention (COP-7) in 2015, PCN was listed in Annex A (with specific exemptions shown in Table 1 below) and C of the Convention. For chemicals listed in Annex A of the Convention, Parties would have to take measures to prohibit the production, import, export and use of the chemicals. For Annex C chemicals, Parties would have to reduce or eliminate the unintentional production of the chemicals.

Table 1: Listing of PCN in Annex A of the Stockholm Convention

Chemical	Activity	Specific Exemption
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Polychlorinated naphthalenes, including dichlorinated naphthalenes, trichlorinated naphthalenes, tetrachlorinated naphthalenes, pentachlorinated naphthalenes, hexachlorinated naphthalenes, heptachlorinated naphthalenes, octachlorinated naphthalene	Production	Intermediates in production of polyfluorinated naphthalenes, including octafluoronaphthalene
	Use	Production of polyfluorinated naphthalenes, including octafluoronaphthalene

### **Trichlorfon**

6 The Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade is a global treaty to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment.

7 Trichlorfon, which is an organophosphate, is used in pesticides for field crops, fruits, vegetables, and ornamental plants. It is also used for pest control in cattle and horses. Currently, there are other active ingredients that are being used as alternatives to trichlorfon.

8 At the 8<sup>th</sup> Meeting of the Conference of Parties of the Rotterdam Convention (COP-8) in 2017, trichlorfon was listed in Annex III of the Convention. Chemicals listed in Annex III are subjected to the PIC procedure which involves formally obtaining the decisions of importing Parties on whether they wish to receive future shipments of the chemical of concern and ensuring that exporting Parties comply with the decisions of importing Parties.

### **Proposed Regulatory Control**

9 In line with the obligations of the Conventions and with the availability of alternatives for PCN and trichlorfon, the domestic control measures for these chemicals are being reviewed.

10 NEA plans to gazette the control of PCN and trichlorfon under the EPMA and EPM (HS) Regulations by November 2017. Importers, manufacturers and distributors of these chemicals and products containing these chemicals will have 6 months from the date of gazette to comply with the control measures. With effect from May 2018, the production, import, export and use of PCN in Singapore will not be allowed. A HS Licence will be required for companies that import, export and sell trichlorfon, while end-users that store and use trichlorfon will be required to obtain a HS Permit.

