

# A survey of PBDEs in recycled carpet padding

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# PBDE recycling exemption

TetraBDE, PentaBDE, HeptaBDE, OctaBDE

Allows recycling of articles containing listed substances



# Study questions

**PentaBDE or OctaBDE present in recycled foam carpet padding?**

**Difference between developed and developing countries?**



# Methods

Market survey shows hard to find in developing countries

XRF screening for Bromine

Lab analysis; Institute of Chemical Tech; Czech Republic

PentaBDE BDE47, 49, 66, 85, 99, 100

OctaBDE BDE153, 154, 183, (196, 197, 203, 206, 207)

DecaBDE BDE209

# Study samples

26 samples from 6 countries

**Canada**      **Ottawa, Toronto, Victoria, Winnipeg**

**Hungary**      **Budapest**

**Kyrgyzstan**      **Bishkek**

**Nepal**      **Kathmandu**

**Thailand**      **Bangkok**

**USA**      **Anchorage, Ann Arbor, Ithaca,  
Schenectady, Seattle**

# Results

<u>Substance</u>	<u>No. containing</u>	<u>Range (ppm)</u>	<u>No. above 50 ppm</u>
PentaBDE	20 (77%)	1 – 1130	13 (50%)
OctaBDE	17 (65%)	1 – 263	7 (27%)
DecaBDE	23 (89%)	1 – 166	6 (23%)

Different samples from same manufacturer could contain varying amounts of PBDEs

# Exposure concerns

**Foam recyclers and carpet installers have body burdens of PBDEs that are 10 times higher than general population**

**Concerns over exposure in children**

**In US: industry estimates ~ 6 million kg recycled foam in homes and offices**

**POPRC technical paper: assessment of health costs (USD\$6billion) vs. North American market (USD\$15 million)**

# POPRC6 review of recycling exemption

POPRC-6/2

**Objective: eliminate BDEs from waste stream “as swiftly as possible”**

**Dispersal of BDEs into materials; hard to recover**

**Focus on developed countries**



# COP5 Decision

**SC-5/5**

**Encourage Parties to implement POPRC recommendations**

**Encourage Parties to ensure that wastes containing listed BDEs are not exported to developing and transition countries**

# **New study: kitchen products**

**Samsonek J, Puype F (2013) Food Additives & Contaminants in press**

**Belgium, Czech Republic Germany, Slovakia, Sweden**

**Recycled plastic in thermo cup lids**

**DecaBDE most common; also TBBPA and others**

**10 ppm – 1922 ppm**



# Summary

**Common recycled products contain listed POPs**

**Concerns over human exposure**

**Recycling exemption should end**

**Thank you**



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