**Sustainable Futures**

**Summary Assessment**

**Using**

**P2 Framework Models**

This document was developed to help compile estimation results from U.S. EPA OPPT’s P2

Framework Models and is used by OPPT during Sustainable Futures (SF) training described at

[www.epa.gov/oppt/sf](http://www.epa.gov/oppt/sf).

Participants in the voluntary SF Initiative are asked to submit the

information contained in this assessment along with their SF PMNs in their choice of format.

**Use of this specific format is not mandatory.**

**Chemical Assessed:**

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**CAS Registry Number:**

**Participant Name:**

**Date of Assessment:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Record ID:** | | | **CAS No.** | |
| **Chemical Structure**  **Is this a representative structure?** | | | **MW:** | |
| **MF:** | |
| **Physical Form:** | |
| **Submitter:** | |
| **Trade Name:** | |
| **Use:** | |
| **Production Volume:** | |
| **SMILES:** | | | | |
| **Name:** | | | | |
| **Synonyms:** | | | | |
| **SUSTAINABLE FUTURES SUMMARY:** | | | | |
| **Concern Level** | **HIGH** | **MODERATE** | | **LOW** |
| **Persistence** |  |  | |  |
| **Bioconcentration** |  |  | |  |
| **Cancer Health Hazard** |  |  | |  |
| **Non-Cancer Health Hazard** |  |  | |  |
| **Aquatic Toxicity Hazard** |  |  | |  |
| Is the chemical predicted to be a PBT by PBT Profiler? |  | | | |
| **Overall Hazard Concern** | **Human Health Hazard:**  **Aquatic Hazard:** | | | |
| **Overall Risk** | **Human Health Risk:**  **Aquatic Risk:** | | | |

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| **CAS No.** | **Submitter:** |
| PHYSICAL/CHEMICAL PROPERTIES: | |
| **Melting Point (deg C)** |  |
| **Boiling Point (deg C)** |  |
| **Boiling Point Pressure (mm Hg)** |  |
| **Vapor Pressure (mm Hg)** |  |
| Water Solubility at 25 deg C (g/L) |  |
| **Log Kow** |  |
| **ENVIRONMENTAL TRANSPORT AND FATE:** | |
| **Transport** | |
| **Henry’s Law Constant – HLC (atm-m3/mol)** |  |
| **Soil Adsorption Coefficient – log Koc** |  |
| **Log Bioconcentration Factor – BCF** |  |
| Persistence | |
| **Probability of Rapid Biodegradation** |  |
| **Ultimate Biodeg Model** |  |
| **Primary Biodeg Model** |  |
| **Ready Biodegradability (MITI Model)** |  |
| **Atmospheric Half-life** |  |
| **Hydrolysis Half-life** |  |
| **Volatilization Half-life for Model River** |  |
| **Volatilization Half-life for Model Lake** |  |
| **Removal in STP (EPA Draft Method)** |  |
| **Experimental Data** |  |
| Byproducts | |
| **Degradation Products** |  |
| **Metabolites** |  |

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| **CAS No.** | **Submitter:** |
| **ECOTOXICITY:** | |
| **ECOSAR Class** |  |
| Acute Toxicity | |
| **Fish LC50** |  |
| **Daphnid LC50** |  |
| **Green Algae EC50** |  |
| Chronic Toxicity | |
| **Fish ChV** |  |
| **Daphnid ChV** |  |
| **Green Algae ChV** |  |
| **Hazard Concern for Aquatic Toxicity** |  |
| **Concern Concentration** |  |
| **CANCER HEALTH EFFECTS:** | |
| **Experimental data** |  |
| **OncoLogic Results** |  |
| **Overall Hazard Concern for Carcinogenicity** |  |
| **NON-CANCER HEALTH EFFECTS:** | |
| **Acute Toxicity** |  |
| **Irritation** |  |
| **Skin Sensitizer** |  |
| **Reproductive Effects** |  |
| **Developmental Effects** |  |
| **Immune System Effects** |  |
| **Neurotoxicity** |  |
| **Genotoxicity** |  |
| **Mutagenicity** |  |
| **Systemic Effects** |  |
| **Overall Hazard Concern for Non-Cancer**  **Health Effects** |  |

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| **CAS No.** | | **Submitter:** | | |
| **EXPOSURE MODELS:** | | | | |
| **INDUSTRIAL RELEASE AND EXPOSURE VALUES: CHEMSTEER** | | | | |
| Process |  | Number of Release Days | |  |
| **SIC Code / NPDES #** |  | **Number of Facilities** | | 1 |
| Occupational Exposure Values | | | | |
|  | **Cancer LADD** | **Chronic ADD** | | Acute APDR |
| Dermal |  |  | |  |
| **Inhalation** |  |  | |  |
| **Environmental Release Values** | | | | |
| **Release to Water [Equipment cleaning]** | |  | | |
| **Release to Air (Fugitive) [Equipment cleaning]** | |  | | |
| **Release to Air (Fugitive) [loading liquid product into drums]** | |  | | |
| **Release to Landfill** | |  | | |
| **Release from Incineration** | |  | | |
| **Other Release Activities** | |  | | |
| **GENERAL POPULATION EXPOSURE VALUES: E-FAST** | | | | |
| **Aquatic Exposure:** | | | | |
| **Lowest Acute COC – Aquatic Exposure** | |  | | |
| **Lowest Chronic COC – Aquatic Exposure** | |  | | |
| **Predicted Environmental Concentration (PEC)** | |  | | |
| **PEC Exceeds Chronic COC (days / year)** | |  | | |
| **Human Exposure:** | | | | |
|  | **Cancer LADDpot** | **Chronic ADDpot** | | Acute ADRpot |
| **Drinking Water** |  |  | |  |
| **Fish Ingestion** |  |  | |  |
| **Fugitive Emissions [drumming]** |  |  | |  |
| **Fugitive Emissions [reactor cleaning]** |  |  | |  |
| **Incineration Emissions** |  |  | |  |
| **Landfill Leaching** |  |  | |  |
| **Dermal – Consumer Use** |  |  | |  |
| **Inhalation – Consumer Use** |  |  | |  |
| **RISK ASSESSMENT CALCULATIONS:** | | | | |
| **MOE – Acute Occupational Exposure** | | |  | |
| **MOE – Chronic Occupational Exposure** | | |  | |
| **MOE – Acute General Population Exposure** | | |  | |
| **MOE – Chronic General Population Exposure** | | |  | |

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| **CAS No.** | **Submitter:** |
| **SUMMARY CONCLUSIONS:**  ***Occupational Risk:***  **Risk of Non-Cancer Acute Effects from Occupational Exposure:**  **Risk of Non-Cancer Chronic Effects from Occupational Exposure:**  **Risk** **of Cancer Effects from Occupational Exposure:**  ***General Population Risk:***  **Risk of Non-Cancer Acute Effects to General Population:**  **Risk of Non-Cancer Chronic Effects to General Population**:  **Risk of Cancer Effects to General Population:**  ***Consumer Risk:***  **Risk of Non-Cancer Acute Effects to General Population:**  **Risk of Non-Cancer Chronic Effects to General Population**:  **Risk of Cancer Effects to General Population:**  ***Aquatic Risk:***  **Acute Risk to the Aquatic Environment:**  **Chronic Risk to the Aquatic Environment:**  **WRITE-UP SECTIONS:**  **Physical/Chemical Properties**  **Environmental Fate** | |

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| **CAS No.** | **Submitter:** |
| **Aquatic Hazard**    **Human Health Cancer Hazard**    **Human Health Non-Cancer Hazard** | |

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| **CAS No.** | **Submitter:** |
| **Environmental (Aquatic) Exposure**    **Occupational Exposure**    **General Population Exposure**  **Consumer Exposure**    **Environmental (Aquatic) Risk Assessment** | |

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| **CAS No.** | **Submitter:** |
| **Human Health Risk Assessment**  **Abbreviations Used** | |

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| **CAS No.** | **Submitter:** |
| Table I - Selected Analogs  |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Analog** | **Structure** | **Concern Identified** | **Basis of Concern** | **Concern Level** | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  |   **References** | |

**Appendix 1: Determination of Aquatic Risk**

**Chemical Identifier:**   **CAS Number:**

**Release Activity 1:**   **Site Information:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Endpoint** | **Effect Level (ppb)** | **Assessment Factor** | **Acute COC (ppb)** | **PEC (ppb)** | **Potential for Risk?** |
| **Acute Profile** |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Chronic Profile** | **Endpoint** | **Effect Level (ppb)** | **Assessment Factor** | **Chronic COC (ppb)** | **Days/Year PEC Exceeds COC** | **Potential for Risk?** |
|  |  |  |  |  |  |
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**Appendix 2: Determination of Human Health Risk from Occupational Exposure**

**Chemical Identifier: CAS Number:**

**Exposure Activity 1:**   **Site Information:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Endpoint**  **(Concern Effect)** | **NOAEL**  **(mg/kg-d)** | **LOAEL**  **(mg/kg-d)** | **Exposure Dose and Source**  **(mg/kg-d)** | **MOE\*** | **Potential for Risk?** |
| **Occupational Exposure** |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**Appendix 3: Determination of Human Health Risk to the General Population and Consumers**

**Chemical Identifier:**   **CAS Number:**

**Exposure Activity 1:**   **Site Information:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Endpoint**  **(Concern Effect)** | **NOAEL**  **(mg/kg-d)** | **LOAEL**  **(mg/kg-d)** | **Exposure Dose and Source**  **(mg/kg-d)** | **MOE\*** | **Potential for Risk?** |
| **General Population Exposure** |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| **Consumer Exposure** |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |