United States
Environmental Protection Agency

Office of Chemical Safety and
Pollution Prevention

Proposed Designation of 1,2-Dichloropropane (CASRN 78-87-5) as a High-Priority Substance for Risk Evaluation

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Acronyms and Abbreviations

Term	Description
ACGIH	American Conference of Governmental Industrial Hygienists
ATSDR	Agency for Toxic Substances and Disease Registry
Biomon.	Biomonitoring
BOD	Biochemical oxygen demand
BP	Boiling point
CAA	Clean Air Act
CASRN	Chemical Abstracts Service Registry Number
CBI	Confidential Business Information
CDR	Chemical Data Reporting
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
Concen.	Concentration
CWA	Clean Water Act
CPDat	Chemical and Products Database
ECOTOX	Ecotoxicology Database
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FDA	U.S. Food and Drug Administration
FR	Federal Register
GC	Gas chromatography
HPLC	High performance liquid chromatography
IRIS	Integrated Risk Information System
IUR	Inventory Update Rule
K	Thousand
K_{OC}	Organic carbon-water partition coefficient
K_{OW}	Octanol-water partition coefficient
M	Million
MITI	Ministry of International Trade and Industry
MP	Melting point
NAICS	North American Industry Classification System
NIH	National Institute of Health
NIOSH	National Institute for Occupational Safety and Health
NR	Not reported
OECD	Organisation for Economic Co-operation and Development
·OH	Hydroxyl radical
OPPT	Office of Pollution Prevention and Toxics
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit

POTW	Publicly owned treatment works
PPE	Personal protective equipment
PPM	Parts per million
RCRA	Resource Conservation and Recovery Act
REL	Recommended Exposure Limit
RY	Reporting Year
SOP	Standard Operating Procedure
SMILES	Simplified Molecular-Input Line-Entry System
$T_{1/2}$	Half-life
TG	Test guidance
TLV	Threshold Limit Value
TRI	Toxics Release Inventory
TSCA	Toxic Substances Control Act
TWA	Time weighted average
USGS	United States Geological Survey
VP	Vapor pressure
WS	Water solubility

1. Introduction

In section 6(b)(1)(B) of the Toxic Substances Control Act (TSCA), as amended, and in the U.S. Environmental Protection Agency's (EPA's) implementing regulations (40 CFR 702.3)[1], a high-priority substance for risk evaluation is defined as a chemical substance that EPA determines, without consideration of costs or other non-risk factors, may present an unreasonable risk of injury to health or the environment because of a potential hazard and a potential route of exposure under the conditions of use, including an unreasonable risk to potentially exposed or susceptible subpopulations identified as relevant by EPA.

Before designating prioritization status, under EPA's regulations at 40 CFR 702.9 and pursuant to TSCA section 6(b)(1)(A), EPA will generally use reasonably available information to screen the candidate chemical substance under its conditions of use against the following criteria and considerations:

- the hazard and exposure potential of the chemical substance;
- persistence and bioaccumulation;
- potentially exposed or susceptible subpopulations;
- storage near significant sources of drinking water;
- conditions of use or significant changes in the conditions of use of the chemical substance;
- the chemical substance's production volume or significant changes in production volume; and
- other risk-based criteria that EPA determines to be relevant to the designation of the chemical substance's priority.

This document presents the review of the candidate chemical substance against the criteria and considerations set forth in 40 CFR 702.9 for a may present risk finding. The information sources used are relevant to the criteria and considerations and consistent with the scientific standards of TSCA section 26(h), including, as appropriate, sources for hazard and exposure data listed in Appendices A and B of the *TSCA Work Plan Chemicals: Methods Document* (February 2012) (40 CFR 702.9(b)). Final designation of the chemical substance as a high-priority chemical substance would immediately initiate the risk evaluation process as described in the EPA's final rule, *Procedures for Chemical Risk Evaluation Under the Amended Toxic Substances Control Act* (40 CFR 702).

1,2-Dichloropropane is one of the 40 chemical substances initiated for prioritization as referenced in the March 21, 2019 notice (84 FR 10491)[2]. EPA has determined that 1,2-dichloropropane is a suitable candidate for the proposed designation as a high-priority substance. The proposed designation is based on the results of the review against the aforementioned criteria and considerations as well as review of the reasonably available information on 1,2-dichloropropane, including relevant information received from the public and other information as appropriate.

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[1] NOTE: For all 40 CFR 702 citations, please refer to: https://www.govinfo.gov/content/pkg/CFR-2018-title40-vol33/xml/CFR-2018-title40-vol33-part702.xml and https://www.regulations.gov/document?D=EPA-HQ-OPPT-2016-0654-0108

[2] https://www.federalregister.gov/documents/2019/03/21/2019-05404/initiation-of-prioritization-under-the-toxic-substances-control-act-tsca

EPA will take comment on this proposed designation for 90 days before finalizing its designation of 1,2-dichloropropane. The docket number for providing comments on 1,2-dichloropropane is EPA-HQ-OPPT-2018-0428 and is available at www.regulations.gov.

The information, analysis and basis used for the review of the chemical is organized as follows:

- *Section 1 (Introduction):* This section explains the requirements of the amended TSCA and implementing regulations – including the criteria and considerations – pertinent to the prioritization and designation of high-priority chemical substances.

- *Section 2 (Production volume or significant changes in production volume):* This section presents information and analysis on national aggregate production volume of the chemical substance.

- *Section 3 (Conditions of use or significant changes in conditions of use):* This section presents information and analysis regarding the chemical substance's conditions of use under TSCA.

- *Section 4 (Potentially exposed or susceptible subpopulations):* This section presents information and analysis regarding potentially exposed or susceptible subpopulations, including children, women of reproductive age, and workers, with respect to the chemical substance.

- *Section 5 (Persistence and bioaccumulation):* This section presents information and analysis regarding the physical and chemical properties of the chemical substance and the chemical's fate characteristics.

- *Section 6 (Storage near significant sources of drinking water):* This section presents information and analysis considered regarding the risk from storage of the chemical substance near significant sources of drinking water.

- *Section 7 (Hazard potential):* This section presents the hazard information relevant to the chemical substance.

- *Section 8 (Exposure potential):* This section presents information and analysis regarding the exposures to the chemical substance.

- *Section 9 (Other risk-based criteria):* This section presents the extent to which EPA identified other risk-based criteria that are relevant to the designation of the chemical substance's priority.

- *Section 10 (Proposed designation):* Based on the results of the review performed and the information and analysis presented, this section describes the basis used by EPA to support the proposed designation.

2. Production volume or significant changes in production volume

Approach

EPA considered current volume or significant changes in volume of the chemical substance using information reported by manufacturers (including importers). EPA assembled reported information for years 1986 through 2015 on the production volume for 1,2-dichloropropane reported under the Inventory Update Reporting (IUR) rule and Chemical Data Reporting (CDR) rule.[3]

Results and Discussion

The national aggregate production volume, which is presented as a range to protect individual site production volumes that are confidential business information (CBI), is presented in Table 1.

Table 1. 1986-2015 National Aggregate Production Volume Data (Production Volume in Pounds)

Chemical ID	1986	1990	1994	1998	2002	2006	2011	2012	2013	2014	2015
1,2-Dichloropropane (78-87-5)	>100M to 500M	>50M to 100M	Not available	>100M to 500M	>100M to 500M	Withheld[4]	CBI[5]	Withheld	Withheld	Withheld	Withheld

M = million

Reference: U.S. EPA (2013) and U.S. EPA (2017)

Production volume of 1,2-dichloropropane in 2015, as reported to EPA during the 2016 CDR reporting period, was withheld by EPA to protect CBI[6]. Production volume of 1,2-

[3] Over time, the requirements for reporting frequency, production volume thresholds, and chemical substances under the Chemical Data Reporting (CDR) rule have changed. CDR was formerly known as the Inventory Update Rule (IUR). The first IUR collection occurred in 1986 and continued every four years through 2006. As part of two rulemakings in 2003 and 2005, EPA made a variety of changes to the IUR, including to change the reporting frequency to every five years to address burdens associated with new reporting requirements. Additional changes to reporting requirements were made in 2011, including to suspend and replace the 2011 submission period with a 2012 submission period, return to reporting every four years, and require the reporting of all years beginning with 2011 production volumes. The reporting of production volumes for all years was added because of the mounting evidence that many chemical substances, even larger production volume chemical substances, often experience wide fluctuations in production volume from year to year. In addition, also as part of the 2011 IUR Modifications final rule (76 FR 50816, Aug 16, 2011), EPA changed the name of the regulation from IUR to CDR to better reflect the distinction between this data collection (which includes exposure-related data) and the TSCA Inventory itself (which only involves chemical identification information).

[4] This information is withheld, because EPA is releasing the 2016 CDR data in stages. EPA released the initial 2016 CDR data in May 2017. The initial data included national production volume (released in ranges), other manufacturing information, and processing and use information, except for information claimed by the submitter to be confidential business information (CBI) or information that EPA is withholding to protect claims of CBI. EPA anticipates releasing additional data after completion of an effort to obtain CBI substantiation required by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amended the Toxic Substances Control Act.

[5] Some specific chemical uses may be claimed by CDR submitters as confidential business information (CBI) under section 14 of TSCA. In these cases, EPA has indicated that the information is CBI.

[6] This information is withheld, because EPA is releasing the 2016 CDR data in stages. EPA released the initial 2016 CDR data in May 2017. The initial data included national production volume (released in ranges), other manufacturing information, and processing and use information, except for information claimed by the submitter to be confidential business information (CBI) or information that EPA is withholding to protect claims of CBI. EPA anticipates releasing additional data after completion of an effort to obtain CBI substantiation required by the Frank R. Lautenberg Chemical Safety for the 21st Century Act, which amended the Toxic Substances Control Act.

dichloropropane as reported to EPA has remained stable from 1986-2002, and withheld from 2006 – 2015 (Table 1).

3. Conditions of use or significant changes in conditions of use

Approach

EPA assembled information to determine conditions of use or significant changes in conditions of use of the chemical substance. TSCA section 3(4) defines the term "conditions of use" to mean the circumstances, as determined by the Administrator, under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of.

A key source of reasonably available information that EPA considered for determining the conditions of use for 1,2-dichloropropane was submitted by manufacturers (including importers) under the 2012 and 2016 CDR reporting cycles. CDR requires manufacturers (including importers) to report information on the chemical substances they produce domestically or import into the United States greater than 25,000 pounds per site, except if certain TSCA actions apply (in which case the reporting requirement is greater than 2,500 pounds per site). CDR includes information on the manufacturing, processing, and use of chemical substances. Based on the known manufacturing, processing and uses of this chemical substance, EPA assumes distribution in commerce. CDR may not provide information on other life-cycle phases such as distribution or chemical end-of-life after use in products (i.e., disposal). While EPA may be aware of additional uses, CDR submitters are not required to provide information on chemical uses that are not regulated under TSCA.

For chemical substances under review that are included on the Toxics Release Inventory (TRI) chemical list, information disclosed by reporting facilities in Part II Section 3 ("Activities and Uses of the Toxic Chemical at the Facility") of their TRI Form R reports was used to supplement the CDR information on conditions of use (Tables 4, 5, 6). There is not a one-to-one correlation between conditions of use reported under CDR and information reported in Part II Section 3 of the TRI Form R because facilities are not required to disclose in their Form R submissions the specific uses of TRI chemical substances they manufactured on-site or imported. In addition to the information disclosed in Part II Section 3 of the TRI Form R, the information pertaining to waste management activities (i.e., disposal/releases, energy recovery, recycling, and treatment) disclosed in other sections of the Form R was also used to supplement the CDR information on conditions of use as shown in Tables 4, 5 and 6. For purposes of this proposed prioritization designation, EPA assumed end-of-life pathways that include releases to air, wastewater, and solid and liquid waste based on the conditions of use.

CDR and TRI Tables

Based on the publicly available[7] manufacturing information, industrial processing and use information, and consumer and commercial use information reported under CDR, EPA developed a list of conditions of use for the 2016 and 2012 reporting cycles (Table 2 and Table 3, respectively).

[7] Some specific chemical uses may be claimed by CDR submitters as confidential business information (CBI) under section 14 of TSCA. In these cases, EPA has indicated that the information is CBI.

Table 2. 1,2-Dichloropropane (78-87-5) Categories and Subcategories of Conditions of Use[8] (2016 CDR reporting cycle)

Life-Cycle Stage	Category	Subcategory of Use	Reference
Manufacturing	Domestic manufacturing	Domestic manufacturing	U.S. EPA (2019a)
	Import	Import	U.S. EPA (2019a)
Processing	As a reactant	Intermediate in all other basic organic chemical manufacturing	U.S. EPA (2019a)
	Incorporation into formulation, mixture, or reaction product	Intermediate in all other chemical product and preparation manufacturing	U.S. EPA (2019a)
Distribution in commerce [a,b]	Distribution in commerce		
Disposal [a]	Disposal		

[a] CDR includes information on the manufacturing, processing, and use of chemical substances. CDR may not provide information on other life-cycle phases such as distribution or chemical end-of-life after use in products (i.e., disposal). The table row is highlighted in gray to indicate that no information is provided for this life-cycle state.
[b] EPA is particularly interested in information from the public on distribution in commerce.

Table 3. 1,2-Dichloropropane (78-87-5) Categories and Subcategories of Conditions of Use[9] (2012 CDR reporting cycle)

Life-Cycle Stage	Category	Subcategory of Use	Reference
Manufacturing	Domestic manufacturing	Domestic manufacturing	U.S. EPA (2019a)
	Import	Import	U.S. EPA (2019a)
Processing	As a reactant	Intermediate in all other basic organic chemical manufacturing	U.S. EPA (2019a)
Distribution in commerce [a,b]	Distribution in commerce		
Disposal [a]	Disposal		

[a] CDR includes information on the manufacturing, processing, and use of chemical substances. CDR may not provide information on other life-cycle phases such as distribution or chemical end-of-life after use in products (i.e., disposal). The table row is highlighted in gray to indicate that no information is provided for this life-cycle stage.
[b] EPA is particularly interested in information from the public on distribution in commerce.

EPA used TRI data to identify additional conditions of use and to supplement CDR information about conditions of use. In addition, TRI information from 2017 is useful for demonstrating that a condition of use reported to CDR in 2015 is still ongoing.

[8] Certain other uses that are excluded from TSCA are not captured in this table.
[9] Certain other uses that are excluded from TSCA are not captured in this table.

Table 4. Activities and Uses Reported to TRI for 1,2-Dichloropropane, Reporting Year 2011

Activity Type	Activity	Industry Group	NAICS Code
Manufacture	Produce	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
		Other Pipeline Transportation	4869
	Import	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
	Produce or import for on-site use/processing	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
	Produce or import for sale/distribution	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
	Produce or import as a byproduct	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
		Other Pipeline Transportation	4869
	Produce or import as an impurity	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Pipeline Transportation	4869
Process	Process as a reactant	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
	Process as an impurity	Nonmetallic Mineral Mining and Quarrying	2123
	Process – repackaging	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622
Otherwise Use	Otherwise use – as a chemical processing aid	Basic Chemical Manufacturing	3251
	Otherwise use – as a manufacturing aid	Basic Chemical Manufacturing	3251
		Other Pipeline Transportation	4869
	Otherwise use – ancillary or other use	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Waste Treatment and Disposal	5622

Activity Type	Activity	Industry Group	NAICS Code
Waste Management	Disposal/releases	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622
	Energy recovery	Basic Chemical Manufacturing	3251
		Other Nonmetallic Mineral Product Manufacturing	3279
		Waste Treatment and Disposal	5622
	Recycling	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
	Treatment	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Waste Treatment and Disposal	5622

Reference: U.S. EPA, 2019b

Table 5. Activities and Uses Reported to TRI for 1,2-Dichloropropane, Reporting Year 2015

Activity Type	Activity	Industry Group	NAICS Code
Manufacture	Produce	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
	Import	Basic Chemical Manufacturing	3251
	Produce or import for on-site use/processing	Basic Chemical Manufacturing	3251
	Produce or import for sale/distribution	Basic Chemical Manufacturing	3251
	Produce or import as a byproduct	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
	Produce or import as an impurity	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259

Activity Type	Activity	Industry Group	NAICS Code
Process	Process as a reactant	Basic Chemical Manufacturing	3251
	Process as an article component	Waste Treatment and Disposal	5622
	Process as an impurity	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
	Process – repackaging	Basic Chemical Manufacturing	3251
		Ship and Boat Building	3366
Otherwise Use	Otherwise use – as a chemical processing aid	Basic Chemical Manufacturing	3251
	Otherwise use – as a manufacturing aid	Basic Chemical Manufacturing	3251
	Otherwise use – ancillary or other use	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Nonmetallic Mineral Product Manufacturing	3279
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622
Waste Management	Disposal/releases	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Ship and Boat Building	3366
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622
	Energy recovery	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Nonmetallic Mineral Product Manufacturing	3279
	Recycling	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
	Treatment	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Ship and Boat Building	3366
		Waste Treatment and Disposal	5622

Reference: (U.S. EPA, 2019b)

Table 6. Activities and Uses Reported to TRI for 1,2-Dichloropropane, Reporting Year 2017

Activity Type	Activity	Industry Group	NAICS Code
Manufacture	Produce	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
	Import	Basic Chemical Manufacturing	3251
	Produce or import for on-site use/processing	Basic Chemical Manufacturing	3251
	Produce or import for sale/distribution	Basic Chemical Manufacturing	3251
	Produce or import as a byproduct	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Other Chemical Product and Preparation Manufacturing	3259
	Produce or import as an impurity	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
Process	Process as a reactant	Basic Chemical Manufacturing	3251
	Process as an impurity	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
	Process – repackaging	Basic Chemical Manufacturing	3251
Otherwise Use	Otherwise use – as a chemical processing aid	Basic Chemical Manufacturing	3251
	Otherwise use – as a manufacturing aid	Foundries	3315
	Otherwise use – ancillary or other use	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
		Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	3253
		Other Chemical Product and Preparation Manufacturing	3259
		Other Nonmetallic Mineral Product Manufacturing	3279
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622

Activity Type	Activity	Industry Group	NAICS Code
Waste Management	Disposal/releases	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	3253
		Other Chemical Product and Preparation Manufacturing	3259
		Other Pipeline Transportation	4869
		Waste Treatment and Disposal	5622
	Energy recovery	Basic Chemical Manufacturing	3251
		Resin, Synthetic Rubber, and Artificial and Synthetic Fibers and Filaments Manufacturing	3252
	Recycling	Basic Chemical Manufacturing	3251
		Other Chemical Product and Preparation Manufacturing	3259
		Waste Treatment and Disposal	5622
	Treatment	Nonmetallic Mineral Mining and Quarrying	2123
		Basic Chemical Manufacturing	3251
		Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	3253
		Other Chemical Product and Preparation Manufacturing	3259
		Waste Treatment and Disposal	5622

Reference: (U.S. EPA, 2019b)

CDR and TRI Summary and Additional Information on Conditions of Use

In the 2016 CDR reports, 1,2-dichloropropane was not reported as used in manufacturing commercial or consumer products. Three sites reported use of 1,1-dichloropropane as an intermediate reactant in all other basic organic chemical manufacturing. Two facilities withheld all manufacturing information. Between 2012 and 2016, the functional use of 1,2-dichloro-propane remained consistent as a reactant, or incorporated into formulation, mixture, or reaction product (Tables 2 and 3). For 1,2-dichloropropane, no consumer or commercial uses were reported in 2012 and 2016. Consumer uses were identified in additional databases, which are included in the Exposure Potential section (Section 8).

TRI data reported in Part II Section 3 of the TRI Form R ("Activities and Uses of the Toxic Chemical at the Facility") were compiled for Reporting Year (RY) 2011, RY 2015, and RY 2017. RY 2011, RY 2015, and RY 2017 reflect the chemical activities at reporting facilities in calendar years 2011, 2015, and 2017, respectively. Each facility filing a TRI Form R discloses activities that apply to the TRI chemical at the facility. The TRI data presented above are from the TRI dataset updated in April 2019. Tables 4, 5 and 6 present the activities and uses reported to TRI by industry group for 2011, 2015, and 2017. Waste management activity type includes all industry groups that reported to TRI using each waste management activity for 1,2-dichloro-propane.

Should the Agency decide to make a final decision to designate this chemical substance as a high-priority substance, further characterization of relevant TSCA conditions of use will be undertaken as part of the process of developing the scope of the risk evaluation.

4. Potentially exposed or susceptible subpopulations

Approach

In this review, EPA considered reasonably available information to identify potentially exposed or susceptible subpopulations, such as children, women of reproductive age, workers, consumers or the elderly. EPA analyzed processing and use information included on the CDR Form U. These data provide an indication about whether children or other susceptible subpopulation may be potentially exposed. EPA also used human health hazard information to identify potentially exposed or susceptible subpopulations.

Results and Discussion

At this stage, EPA identified children, women of reproductive age, consumers and workers as subpopulations who may be potentially exposed or susceptible subpopulations for 1,2-dichloro-propane.

Children

EPA used data reported to the 2012 and 2016 CDR to identify uses in products and articles intended for children over time for 1,2-dichloropropane. The 2012 and 2016 CDR did not report any use in children's products. In the existing assessments reviewed, there was no discussion on the susceptibility of children to 1,2-dichloropropane. However, EPA identified potential developmental hazards that would impact any stage of children's development.

Women of reproductive age (e.g., pregnant women per TSCA statute)

EPA identified studies that observed developmental and reproductive effects following exposure to 1,2-dichloropropane (Section 7, Table 9). Thus, women of reproductive age were identified as a potentially exposed or susceptible subpopulation.

Consideration of women of reproductive age as a potentially exposed or susceptible subpopulation was also based on exposure because women of reproductive age are potential workers in the manufacturing, processing, distribution in commerce, use, or disposal of the chemical substance.

Workers

Please refer to the Exposure Potential section (Section 8) for a summary of potential occupational exposures, which EPA indicates that workers are potentially exposed or susceptible subpopulations based on greater exposure.

Consumers

Please refer to the Exposure Potential section (Section 8) for a summary of potential consumer exposures, which EPA indicates that consumers are potentially exposed or susceptible subpopulations based on greater exposure.

Persistence and bioaccumulation

Approach

EPA reviewed reasonably available data, such as physical and chemical properties and environmental fate characteristics, to understand 1,2-dichloropropane's persistence and bioaccumulation.

Physical and Chemical Properties and Environmental Fate Tables

Table 7 and Table 8 summarize the physical and chemical properties and environmental fate characteristics of 1,2-dichloropropane, respectively.

Table 7. Physical and Chemical Properties of 1,2-Dichloropropane

Property or Endpoint	Value[a]	Reference
Molecular Formula	$C_3H_6Cl_2$	CRC Handbook (Rumble, 2018)
Molecular Weight	112.986	CRC Handbook (Rumble, 2018)
Physical State	Liquid	CRC Handbook (Rumble, 2018)
Physical Form	Colorless liquid	HSDB (2019) citing Lewis (1997)
Purity	Impurities include water (200 ppm), acidity (50 ppm), iron (15 ppm), oxygenated organic compounds (1200 ppm). Also <0.1% w/w acetone and <0.1% w/w propionaldehyde reported	OECD (2006)
Melting Point	−100 °C[b]	U.S. EPA (2012a); OECD (2006) citing Mackay et al. (1993)
	−100.53 °C	CRC Handbook (Rumble, 2018)
Boiling Point	95.5 °C[b]	U.S. EPA (2012a); OECD (2006) citing Mackay et al. (1993)
	96.4 °C	CRC Handbook (Rumble, 2018)
Density	1.16 g/cm^3 at 20 °C[b]	OECD (2006) citing Mackay et al. (1993)
	1.1560 g/cm^3 at 20 °C	CRC Handbook (Rumble, 2018)
Vapor Pressure	53.3 mm Hg at 25 °C[b]	HSDB (2019) citing Boublik et al. (1984)
	49.7 mm Hg at 25 °C	OECD (2006) citing Mackay et al. (1993)
Vapor Density	3.89 g/L (relative vapor density to air = 1)	OECD (2006); HSDB (2019) citing Verschueren (2001)
Water Solubility	2,800 mg/L at 25 °C	OECD (2006) citing Mackay et al. (1993)
Log K_{OW}	1.98	OECD (2006) citing Mackay et al. (1993)
Henry's Law Constant	2.7 × 10^{-3} atm-m^3/mol at 25 °C	OECD (2006) citing Mackay et al. (1993) and Ashworth et al. (1988)
Flash Point	21 °C (open cup) 13-15 °C (closed cup)	OECD (2006) citing Budavari (1989); Langer (1986); Rassaerts and Witzel (1975)
	16 °C	HSDB (2019) citing NFPA (1997)
Auto Flammability	555 °C	OECD (2006)

Property or Endpoint	Value[a]	Reference
	557 ºC	HSDB (2019) citing NFPA (1997)
Viscosity	0.85 mPa second at 20 ºC	OECD (2006)
Refractive Index	1.44 at 20 ºC	HSDB (2019) citing Budavari (1996)
Dielectric Constant	8.93 at 26 ºC	U.S. DOC (1951)
Surface Tension	0.3 mN/m at 20 ºC	OECD (2006)

Notes: [a]Measured unless otherwise noted; [b]Selected value

Table 8. Environmental Fate Characteristics of 1,2-Dichloropropane

Property or Endpoint	Value[a]	Reference
Direct Photodegradation	Not expected to be susceptible to direct photolysis by sunlight because the chemical structure of 1,2-dichloropropane does not contain chromophores that absorb at wavelengths >290 nm	HSDB (2019) citing U.S. EPA (1979)
	Vapor-phase photolysis under simulated sunlight did not occur after prolonged exposure	HSDB (2019) citing Cohen et al. (1984)
Indirect Photodegradation	t1/2 = 24 days (based on ·OH reaction rate constant of 4.4 × 10–13 cm3/molecule·second at 25 ºC and an ·OH concentration of 1.5 × 106 ·OH/cm3; estimated)[b]	U.S. EPA (2012a)
Hydrolysis	t1/2 = 15.8 years (rate constant of 5.0 × 10-6 hours-1 at pH 7–9 and 25 ºC)	OECD (2006) citing Mackay et al. (1993)
Biodegradation (Aerobic)	0%/14 days based on biological oxygen demand (Japanese MITI test)	HSDB (2019) citing CITI (1992)
	t1/2 = 52 days in a closed system with fresh soil at 15 ºC	HSDB (2019) citing van Dijk (1980)
Wastewater Treatment	59% total removal (12% by biodegradation, 1.1 by sludge and 46% by volatilization to air; estimated)[b]	U.S. EPA (2012a)
Bioconcentration Factor	1.2–3.2 (*Cyprinus caprio* at 0.4 mg/L test substance concentration); 0.5-6.9 (*C. caprio* at 0.04 mg/L test substance concentration)	SYKE (2018); OECD (2006) citing Howard (1990); Mackay et al. (1993)
Bioaccumulation Factor	7.1 (estimated)[b]	U.S. EPA (2012a)
Soil Organic Carbon:Water Partition Coefficient (Log K_{OC})	1.67 (K_{OC} = 47) measured in silt loam	HSDB (2019) citing Chiou et al. (1979)

Notes: [a]Measured unless otherwise noted; [b]EPI™ Suite physical property inputs: Log K_{OW} = 1.98, BP = 95.5 ºC, MP = –100 ºC, VP = 53.3 mm Hg at 25 ºC, WS = 2.800 mg/L, HLC = 2.82 × 10^{-3} atm-m^3/mol at 25 ºC, BioP 120, BioA 30, BioS 30, SMILES ClCC(Cl)C·OH = hydroxyl radical; OECD = Organisation for Economic Co-operation and Development; TG = test guideline; GC = gas chromatography; MITI = Ministry of International Trade and Industry; BCF = bioaccumulation factor; BOD = biochemical oxygen demand; HPLC = high performance liquid chromatography

Results and Discussion

1,2-Dichloropropane is a volatile, highly water-soluble (2,800 mg/L) liquid. Measured Henry's Law constant (2.7 × 10-3 atm-m3/mol) and vapor pressure (53.3 mm Hg) data indicate that this chemical will not be persistent in surface water and soil as it will likely volatilize upon release. In the air, 1,2-dichloropropane is expected to exist primarily in the vapor phase where it may react with photochemically generated hydroxyl radicals with an estimated half-life of 24 days. Direct photodegradation of 1,2-dichloropropane did not occur under simulated sunlight conditions after prolonged exposure. Given a measured hydrolysis half-life of 15.8 years at pH 7 9, hydrolysis is not expected to be an important fate process for 1,2-dichloropropane.

In a Japanese MITI test, 1,2-dichloropropane displayed no biodegradation over 14 days due to biological oxygen demand (BOD). In a closed system with fresh soil at 15 ℃, 1,2-dichloro-propane had a half-life of 52 days. Based on these results,1,2-dichloropropane may persist in subsurface environments, groundwater, or enclosed pipes when volatilization is not an option. In *Cyprinus caprio*, 1,2-dichloropropane displayed low bioaccumulation potential with measured bioaccumulation factor values between 1.2 and 3.2 and an estimated bioaccumulation factor of 7.1.

5. Storage near significant sources of drinking water

Approach

To support the proposed designation, EPA screened each chemical substance under its conditions of use with respect to the seven criteria in TSCA section 6(b)(1)(A) and 40 CFR 702.9. The statute specifically requires the Agency to consider the chemical substance's storage near significant sources of drinking water, which EPA interprets as direction to focus on the chemical substance's potential human health hazard and exposure.

EPA reviewed reasonably available information, specifically looking to identify certain types of existing regulations or protections for the proposed chemical substances. EPA considered the chemical substance's potential human health hazards, including to potentially exposed or susceptible subpopulations, by identifying existing National Primary Drinking Water Regulations under the Safe Drinking Water Act (40 CFR Part 141) and regulations under the Clean Water Act (CWA) (40 CFR 401.15). In addition, EPA considered the consolidated list of chemical substances subject to reporting requirements under the Emergency Planning and Community Right-to-Know Act (EPCRA; Section 302 Extremely Hazardous Substances and Section 313 Toxic Chemicals), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA; Hazardous Substances), and the Clean Air Act (CAA) Section 112(r) (Regulated Chemicals for Accidental Release Prevention). Regulation by one of these authorities is an indication that the substance is a potential health or environmental hazard which, if released near a significant source of drinking water, could present an unreasonable risk of injury to human health or the environment.

Results and Discussion

EPA has established a Maximum Contaminant Level Goal (MCLG) and Maximum Contaminant Level (MCL) of zero for 1,2-dichloropropane due to potential health effects from long-term exposure above the MCL resulting in increased risk of cancer. 1,2-Dichloropropane is also a Priority Pollutant under the CWA and is subject to reporting requirements under the EPCRA. It is subject to the CAA 112(r) for the storage near significant sources of drinking water.

1,2-Dichloropropane is also considered a CERCLA hazardous substance and releases in quantities equal to or greater than 1,000 pounds are subject to reporting to the National Response Center under CERCLA. It is also subject to the Resource Conservation and Recovery Act (RCRA; hazardous waste number U083). RCRA directs EPA to develop and promulgate criteria for identifying the characteristics of hazardous waste, and for listing hazardous waste, taking into account toxicity, persistence, and degradability in nature, potential for accumulation in tissue and other related factors such as flammability, corrosiveness, and other hazardous characteristics.

6. Hazard potential

Approach

EPA considered reasonably available information from peer-reviewed assessments and databases to identify potential human health and environmental hazards for 1,2-dichloropropane (Table 9 and Table 10, respectively).

Because, there are very few publicly available assessments for 1,2-dichloropropane with cited environmental hazard data, EPA used the infrastructure of ECOTOXicology knowledgebase (ECOTOX) to identify single chemical toxicity data for aquatic and terrestrial life (U.S. EPA, 2018a). It uses a comprehensive chemical-specific literature search of the open literature that is conducted according to the Standard Operating Procedures (SOPs)[10]. The environmental hazard information was populated in ECOTOX and is available to the public. In comparison to the approach used to survey human health hazard data, EPA also used a read-across approach to identify additional environmental hazard data for isomers of 1,2-dichloropropane, if available, to fill in potential data gaps when there were no reported observed effects for specific taxa exposed to the 1,2-dichloropropane (Table 10).

Potential Human Health and Environmental Hazard Tables

EPA identified potential human health and environmental hazards based on a review of the reasonably available information for 1,2-dichloropropane (Table 9 and Table 10, respectively).

Table 9. Potential Human Health Hazards Identified for 1,2-Dichloropropane

Human Health Hazards	Tested for a Specific Effect?	Specific Effect Observed	Data Source
Acute Toxicity	X	X	NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), ATSDR (1989)
Repeated Dose Toxicity	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), U.S. EPA (1991), ATSDR (1989), NTP (1986)
Genetic Toxicity	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), ATSDR (1989)
Reproductive Toxicity	X	X	NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), ATSDR (1989)

[10] The ECOTOX Standard Operating Procedures (SOPs) can be found at: https://cfpub.epa.gov/ecotox/

Human Health Hazards	Tested for a Specific Effect?	Specific Effect Observed	Data Source
Developmental Toxicity	X	X	NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), U.S. EPA (1991), ATSDR (1989)
Toxicokinetic	X	X	NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), U.S. EPA (1991), ATSDR (1989)
Irritation/Corrosion	X	X	NICNAS (2017), OECD (2006), CalEPA (1999), ATSDR (1989)
Dermal Sensitization	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), ATSDR (1989)
Respiratory Sensitization			
Carcinogenicity	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), ATSDR (1989)
Immunotoxicology			
Neurotoxicity	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), ATSDR (1989)
Epidemiological Studies or Biomonitoring Studies	X	X	IARC (2017), NICNAS (2017), U.S. EPA (2016b), OECD (2006), CalEPA (1999), ATSDR (1989)

Note: The "X" in the "Effect Observed" column indicates when a hazard effect was reported by one or more of the referenced studies. Blank rows indicate when information was not identified during EPA's review of reasonably available information to support the proposed designation.

Table 10. Potential Environmental Hazards Identified for 1,2-Dichloropropane

Media	Study Duration	Taxa Groups	High-Priority Chemical Candidate 1,2-Dichloropropane (CASRN 78-87-5)		Isomers of 1,2-Dichloropropane (CASRN 78-87-5) 1,1-Dichloropropane (CASRN 78-99-9) 1,3-Dichloropropane (CASRN 142-28-9) 2,2-Dichloropropane (CASRN 594-20-7)		Data Sources
			Number of Studies	Observed Effects	Number of Studies	Observed Effects	
Aquatic	Acute exposure	Vegetation	4	X	1	X	Dow Chemical Co. (1988); Schafer et al. (1993); Schafer et al. (1994); Tsai and Chen (2007)
		Invertebrate	5	X	4	X	Dow Chemical Co. (1988); Freitag et al. (1994); Hollister et al. (1968); LeBlanc (1980); Portmann and Wilson (1971); Shell Oil Co. (1986)
		Fish	3	X	6	X	Brooke et al. (1984); Buccafusco et al. (1981); Geiger et al. (1985); Heitmuller et al. (1981); Shell Oil Co. (1986); Walbridge et al. (1983)
		Non-Fish Vertebrates (i.e., amphibians, reptiles, mammals)	-		-		
	Chronic exposure	Vegetation	3	X	-		Dow Chemical Co. (1988); Schafer et al. (1993); Schafer et al. (1994)
		Invertebrate	2	X	1	X	Dow Chemical Co. (1988); Hollister et al. (1968); Hunter/ESE Inc. (1989)
		Fish	1	X	1	X	Benoit et al. (1982)
		Non-Fish Vertebrates (i.e., amphibians, reptiles, mammals)	-		-		
Terrestrial	Acute exposure	Vegetation	-		-		
		Invertebrate	5	X	-		Neuhauser et al. (1985); Neuhauser et al. (1986)

		Vertebrates	8	X	4	X	Bruckner et al. (1989); Crebelli et al. (1995); Crebelli et al. (1999); Dow Chemical Co. (1989a); Dow Chemical Co. (1989d); Dow Chemical Co. (1992a); Herr and Boyes (1997); Imberti et al. (1990); Kirk et al. (1995); Selan and Evans (1987); Trevisan et al. (1989)
	Chronic exposure	Vegetation	-		-		
		Invertebrate	1	X	-		Neuhauser et al. (1985)
		Vertebrates	20	X	2	X	Bruckner et al. (1989); Dow Chemical Co. (1988); Dow Chemical Co. (1989b); Dow Chemical Co. (1989c); Dow Chemical Co. (1989e); Dow Chemical Co. (1989f); Dow Chemical Co. (1990); Dow Chemical Co. (1992b); Dow Chemical Co. (1993); Dow Chemical Co. (2000); Kirk et al. (1995); National Toxicology Program (NTP) (1986); Rohm and Haas Co. (1992); Shell Oil Co. (1986); Shell Oil Co. (1992); Terrill et al. (1991); Trevisan et al. (1989)

The dash indicates that no studies relevant for environmental hazard were identified during the initial review and thus the "Observed Effects" column is left blank. The X in the Observed Effects column indicates when a hazard effect was reported by one or more of the referenced studies. The N/A in the Observed Effects column indicates when a hazard effect was not reported by one of the referenced studies' abstract (full reference review has not been conducted).

7. Exposure potential

Approach

EPA considered reasonably available information to identify potential environmental, worker/occupational, consumer and general population exposures to 1,2-dichloropropane.

Release potential for environmental and human health exposure

In addition to other required information, a submission of a TRI Form R report must include the quantities of a TRI chemical the facility released on-site to air, water, or land, and the quantities it transferred off-site to another facility for further waste management. On-site release quantities are reported in Part II Section 5 of the TRI Form R, and off-site transfers are reported in Part II Section 6. Waste management activities include: transfers of a TRI chemical in wastewater to a publicly owned treatment works (POTW) facility or to a non-POTW wastewater treatment facility for the purpose of treatment for destruction or removal; combustion for energy recovery; treatment (treatment includes treatment via incineration for destruction and waste stabilization); recycling; and release, including disposal. During treatment, combustion for energy recovery, or recycling activities, it is possible that some of the quantities of the TRI chemical will be released to the environment.

Worker/Occupational and consumer exposure

EPA approach for assessing exposure potential was to review the physical and chemical properties, conditions of use reported in CDR, and information from the National Institutes of Health Consumer Product Database and the Chemical and Products Database (CPDat) for 1,2-dichloropropane. to inform occupational and consumer exposure potential. The results of this review are detailed in the following tables.

General population exposure

EPA identified environmental concentration, human and ecological biomonitoring data to inform 1,2-dichloropropane's exposure potential to the general population (Table 13).

Results and Discussion

Release potential for environmental and human health exposure

Aggregated quantities of 1,2-dichloropropane released on-site to air, water, and land, and aggregated quantities of 1,2-dichloropropane transferred off-site to POTW and other wastewater treatment facilities (non-POTW) are presented in Table 11**Error! Reference source not found.** f or Reporting Years (RY) 2011, 2015, and 2017. The table does not include any of the reported quantities pertaining to other waste management activities (e.g., recycling, combustion for destruction) that occurred on-site or off-site during RY 2011, 2015, and 2017. The "Number of Facilities" is the count of unique facilities that filed a TRI Form R report for 1,2-dichloropropane for RY 2011, 2015, and 2017. The TRI data presented were obtained from the TRI dataset following its update in April 2019.

Table 11. The TRI Data on 1,2-Dichloropropane from Reporting Years 2011, 2015, and 2017 and Used in this Document to Assess Exposure Potential

Year	Number of Facilities That Reported	Total Quantities Released On-Site to Air (lbs.)	Total Quantities Released On-Site to Water (lbs.)	Total Quantities Released (Disposed of) On-Site to Land (lbs.)	Total Quantities Transferred to POTW (lbs.)	Total Quantities Transferred to Other (Non-POTW) Wastewater Treatment Facilities (lbs.)
2011	15	63,770	628	3,108	0	122
2015	16	16,604	304	838	0	12,511
2017	14	19,868	225	239	0	4,803

Note: POTW = publicly owned treatment works
Reference: U.S. EPA, 2019b

For RY 2017, fourteen facilities submitted TRI reports for 1,2-dichloropropane. The total quantities of 1,2-dichloropropane these facilities released on-site to air (as fugitive and stack emissions), surface water, and land are: 19,868 pounds, 225 pounds, and 239 pounds, respectively. These facilities reported zero pounds of the chemical transferred to POTW and 4,803 pounds transferred off-site to other non-POTW wastewater treatment facilities for the purpose of wastewater treatment. These transfer categories represent two types of off-site transfers for wastewater treatment that may lead to releases from the receiving facilities. They do not include quantities sent off-site for other types of waste management activities that include, or may lead to, releases of the chemical.

Quantities transferred off-site represent the amount of a toxic chemical a facility sent off-site prior to any waste management (e.g., treatment) at a receiving facility. Some of the quantities of 1,2-dichloropropane received by the non-POTW wastewater treatment facilities may have been released to surface waters or to air during treatment processes at the facilities.

1,2- Dichloropropane has a vapor pressure of around 52 at 25 ºC. This chemical's vapor pressure indicates potential for air releases from volatilization during manufacturing, processing and use.

When chemical substances are used as reactants and as intermediates, the industrial releases may be a relatively low percentage of the production volume. Lower percentage releases occur when a high percentage of the chemical reacts without excess loss during its use as an intermediate. It is unknown if the actual percentages, quantities, and media of releases of the reported chemical associated with this processing or use are not known

Worker/Occupational exposure
Worker exposures to this chemical may be affected by many factors, including but not limited to volume produced, processed, distributed, used and disposed of; physical form and concentration; processes of manufacture, processing, and use; chemical properties such as vapor pressure, solubility, and water partition coefficient; local temperature and humidity; and exposure controls such as engineering controls, administrative controls, and the existence of a personal protective equipment (PPE) program.

1,2- Dichloropropane has an Occupational Safety and Health Administration (OSHA) Permissible Exposure Limit (PEL) [11]. The PEL is 75 parts per million (ppm) or 350 milligrams (mg)/cubic meter (m^3) over an 8-hour work day, time weighted average (TWA). The American Conference of Governmental Industrial Hygienists (ACGIH) set the Threshold Limit Value (TLV) at 10 ppm TWA.

1,2- Dichloropropane has a vapor pressure of approximately 52 at 25 ºC/77 °F. Its vapor pressure indicates the potential for inhalation exposure to vapors generated by the liquid at ambient room temperature conditions. The extent of inhalation exposure could vary from facility to facility depending on many factors including but not limited to engineering control, type of facility and design.

Consumer exposure
The 2012 CDR, and 2016 CDR (U.S. EPA, 2012b, U.S. EPA, 2016a) have no reported use of 1,2-dichloropropane in consumer products, however there is reported use of 1,2-dichloropropane in consumer products in the Consumer Product Database (CPDat) (Table 12). Existing assessments reviewed also indicate that humans may be exposed through use of commercial products in which 1,2-dichloropropane is used as a solvent in products such as glues, adhesives, degreasers, stain remover, car care products, and in paint remover (NICNAS 2017, NTP 1986).

Table 12. Exposure Information for Consumers

Chemical Identity	Consumer Product Database
	Consumer Uses (List)
1,2-Dichloropropane (78-87-5)	Cleaner, fluid property modulator, solvent

Reference: CPDat

General population exposure
1,2-Dichloropropane was reported in air, water, and soil/sediment matrices, as well as in human blood and aquatic, non-mammalian ecological biomonitoring data.

Table 13. Exposure Information for the Environment and General Population

Database Name	Env. Concen. Data Present?	Human Biomon. Data Present?	Ecological Biomon. Data Present?	Reference
California Air Resources Board	no	no	no	CARB (2005)
Comparative Toxicogenomics Database	no	no	no	MDI (2002)
EPA Ambient Monitoring Technology Information Center – Air Toxics Data	yes	no	no	U.S. EPA (1990)
EPA Discharge Monitoring Report Data	yes	no	no	U.S. EPA (2007)

[11] OSHA, 2019. Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PELs). https://www.osha.gov/dsg/annotated-pels/tablez-1.html

Database Name	Env. Concen. Data Present?	Human Biomon. Data Present?	Ecological Biomon. Data Present?	Reference
EPA Unregulated Contaminant Monitoring Rule	yes	no	no	U.S. EPA (1996)
FDA Total Diet Study	no	no	no	FDA (1991)
Great Lakes Environmental Database	yes	no	no	U.S. EPA (2018b)
Information Platform for Chemical Monitoring Data	yes	no	no	EC (2018)
International Council for the Exploration of the Sea	no	no	no	ICES (2018)
OECD Monitoring Database	no	yes	no	OECD (2018)
Targeted National Sewage Sludge Survey	no	no	no	U.S. EPA (2006)
The National Health and Nutrition Examination Survey	no	yes	no	CDC (2013)
USGS Monitoring Data –National Water Quality Monitoring Council	no	no	no	USGS (1991a)
USGS Monitoring Data –National Water Quality Monitoring Council, Air	no	no	no	USGS (1991b)
USGS Monitoring Data –National Water Quality Monitoring Council, Ground Water	yes	no	no	USGS (1991c)
USGS Monitoring Data –National Water Quality Monitoring Council, Sediment	yes	no	no	USGS (1991d)
USGS Monitoring Data –National Water Quality Monitoring Council, Soil	yes	no	no	USGS (1991e)
USGS Monitoring Data –National Water Quality Monitoring Council, Surface Water	yes	no	no	USGS (1991f)
USGS Monitoring Data –National Water Quality Monitoring Council, Tissue	no	no	yes	USGS (1991g)

[a] Concen.= concentration
[b] Biomon.= biomonitoring

EPA anticipates releases of 1,2-dichloropropane into the environment due to the conditions of use for 1,2-dichloropropane, particularly activities associated with the chemical's manufacturing and processing. Releases of 1,2-dichloropropane from certain conditions of use, such as manufacturing and processing activities, may result in general population exposure through breathing contaminated ambient air or consuming contaminated drinking water (CalEPA 1999). Existing assessments reported that 1,2-dichloropropane appears to be stable and present in the air, soil, surface water, and groundwater (RIVM 2007, OECD 2006, CalEPA 1999).

Based on fate properties, such as the Henry's Law constant, EPA anticipates possible presence of 1,2-dichloropropane in air. In addition, 1,2-dichloropropane can be introduced to the environment as an impurity of 1,3-dichloropropane. Until the early 1980s, 1,3-dichloropropane

was used as a fumigant in soil and in grain crops, where most of the chemical was released to the air or groundwater where breakdown is slow (U.S. EPA 2016b, ATSDR 1989).

8. Other risk-based criteria that EPA determines to be relevant to the designation of the chemical substance's priority

EPA did not identify other risk-based criteria relevant to the designation of the chemical substance's priority.

9. Proposed designation and Rationale

Proposed designation: High-priority substance

Rationale: EPA identified and analyzed reasonably available information for exposure and hazard and is proposing to find that 1,2-dichloropropane may present an unreasonable risk of injury to health and/or the environment, including potentially exposed or susceptible subpopulations (e.g., workers, consumers, women of reproductive age, and children). This is based on the potential hazard and potential exposure of 1,2-dichloropropane under the conditions of use described in this document to support the prioritization designation. Specifically, EPA expects that the manufacturing, processing, distribution, use and disposal of 1,2-dichloropropane may result in presence of the chemical in surface water and groundwater, ingestion of the chemical in drinking water, inhalation of the chemical from air releases, exposure to workers and exposure to the general population, including exposure to children. In addition, EPA identified potential environmental (e.g., aquatic toxicity, terrestrial toxicity), and human health hazards (e.g., acute toxicity, repeated dose toxicity, genetic toxicity, reproductive toxicity, developmental toxicity, toxicokinetic, irritation/corrosion, dermal sensitization, carcinogenicity, neurotoxicity, observations in epidemiological studies or biomonitoring studies).

10. References

Note: All hyperlinked in-text citations are also listed below

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