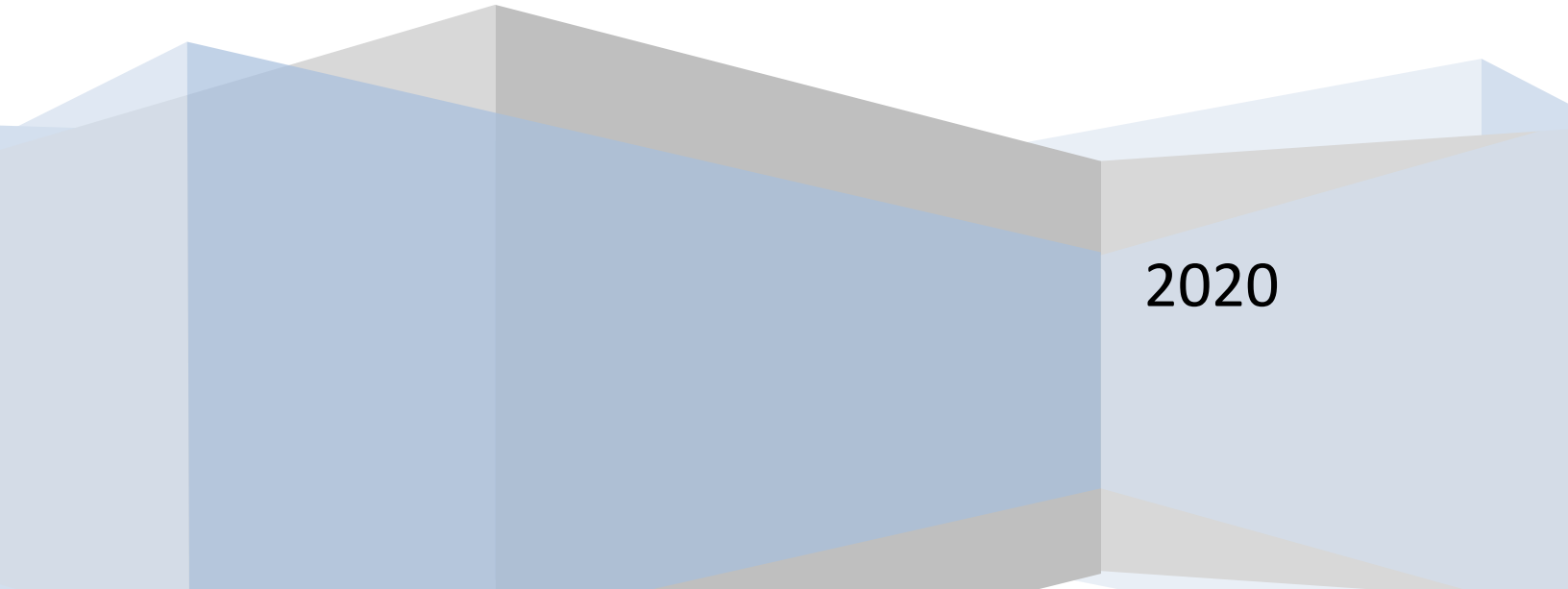
Environment and Climate Change Canada
Health Canada

Identification of Risk Assessment Priorities (IRAP)

Results of the 2019 Review



2020

Contents

Background

Under Canada's Chemicals Management Plan (CMP), Environment and Climate Change Canada (ECCC) and Health Canada (HC) assess the risks posed by chemicals to Canadians and their environment. Priorities for assessment under the *Canadian Environmental Protection Act, 1999* (CEPA) were identified in 2006 (ECCC, HC 2017). Recognizing that new information continues to be generated that could help inform the identification of substances of concern, a regular review of available information is undertaken by HC and ECCC. The approach, known as the Identification of Risk Assessment Priorities (IRAP), is outlined in the "Approach for identification of chemicals and polymers as risk assessment priorities under Part 5 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999)" (Environment Canada, Health Canada 2014).

The cyclical IRAP approach is a systematic compilation and review of information from a large number of information sources. It enables the Government of Canada to communicate how emerging issues are tracked, and to identify and prioritize substances requiring further work. In the approach document, the process for identifying additional priorities is described in three steps:

- **Acquisition** refers to the active and passive collection of information relevant to the potential health and ecological risks of substances
- **Evaluation** refers to the triage of substances for which new information has been received. This evaluation requires expert judgment, and consideration of the different types of information that may be available for any given substance
- **Action** refers to the type of activity that may be undertaken on the substances identified as candidates for further work. These actions include risk assessment, risk management, data gathering, research and monitoring, generation of new data, further scoping/problem formulation, and monitoring of results from international activity. Substances identified for no further action at this time will be considered in future IRAP review cycles

The approach used for the 2019 review is fundamentally similar to the approaches used in previous cycles (ECCC, HC 2015, 2016, 2018). This report describes the manner in which the approach was applied to this review, as well as the results.

Scope of 2019 review

The scope of each review cycle identifies the range of substances considered for prioritization and the type of information used to support prioritization decisions. The 2019 review consisted of identifying new information that would constitute indicators of hazard or exposure for the following types of substances:

- Substances on Canada's Domestic Substances List (DSL) that have not been assessed within the last 5 years and are not scheduled to be assessed under the CMP. This includes previously assessed substances, whether they were found to meet CEPA's definition of toxic (section 64) or not

- Substances that had been previously identified under IRAP and assigned an outcome of data gathering or international activity in previous review cycles where this data is now available, such as substances that were part of the 2017 Inventory Update (Canada 2017; ECCC 2017)
- Substances identified as potentially requiring review as a result of international assessment or management (i.e., pursuant to section 75 of CEPA)

The 2019 review also included substances that were nominated as potential risk assessment candidates by HC or ECCC officials, based on knowledge acquired through research or expertise gained from previous assessments. These substances were considered for review even if they did not meet the scope criteria defined above (e.g., substances not on the DSL). Information found on toxic substances (i.e., on Schedule 1) through the review process will be considered further to determine if follow-up activities may be appropriate.

Acquisition

The acquisition phase involves consideration of diverse information sources, including emerging technologies, to help identify and inform potential priorities. The number and types of sources consulted continues to evolve over time, as new sources are identified or previously identified sources expand and grow. Some sources may only be relevant for the prioritization of substances based on either ecological considerations or human health considerations, while others are relevant for both. Consequently, the same source may be considered or weighted differently for ecological and human health evaluation of substances.

The sources represent a mix of national and international databases, assessments, and reports, which vary from highly specific to very broad sources of information used in risk assessment. A comprehensive list of the sources of information consulted in this review is provided in Appendix A. The following are examples of the types of information used to identify indicators of hazard or exposure for the 2019 review:

- International hazard classifications
- Classifications from the Globally Harmonized System (GHS)
- International lists of restricted and/or prohibited substances, or other lists of international priorities
- Data obtained under CEPA (e.g., domestic use and quantity information)
- Canadian National Pollutant Release Inventory (NPRI) information
- Notifications to Health Canada (e.g., use in cosmetics)
- Canadian and international Material Safety Data Sheets (MSDS)/Safety Data Sheets (SDS)
- Available Canadian and international biomonitoring, and environmental monitoring and surveillance data
- International use and quantity information

- Substances identified as potentially requiring review pursuant to requirements of section 75 of CEPA (e.g., substances implicated by pertinent international conventions/agreements, notifications from other jurisdictions)
- Emerging technologies and sources of data (e.g., NORMAN List of Emerging Substances)

Any new information from these sources is considered, in addition to the information compiled from previous IRAP review cycles.

After reviewing the pertinent information for approximately 23 000 substances within the scope of the 2019 IRAP review, approximately 16 000 substances were identified that had one or more types of information that required further evaluation under the approach. This included substances that had information on either hazard or exposure indicators, or a combination of the two.

Evaluation

Approximately 16 000 substances identified as candidates in the 2019 IRAP review were triaged to separate those that are unlikely to require further work based on information available at this time, from those that represent potential new priorities for assessment, or if further information is required to make that determination.

The guiding principles and considerations that support this evaluation step are described in the "Approach for identification of chemicals and polymers as risk assessment priorities under Part 5 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999)" (Environment Canada, Health Canada 2014).

Results and action

As a result of the evaluation, this IRAP review cycle identified 629 of the ~16 000 substances as having sufficient indicators of hazard or exposure to merit further activity, including i) requiring further scoping/problem formulation, ii) additional data gathering, or iii) monitoring of ongoing international activity. The remaining substances do not require further action at this time. The outcomes, and the number of evaluated substances that fall within each one, are shown in Table 1.

Table 1: Outcomes of the 2019 Review

2019 IRAP review outcome	Total number of substances
Further scoping/problem formulation	85
Additional data gathering	443
Monitoring of ongoing international activity	101
No further action at this time	15 629

As Table 1 illustrates, 85 substances were identified, based on indications of both hazard and exposure, as needing more scoping as a next step before determining the most appropriate course of action. Accordingly, an outcome of further scoping/problem formulation was recommended.[1] This outcome entails an analysis of available data, data needs, areas of focus (e.g., ecological, human health, consumer products, or environmental media), potentially relevant legislation, possible substance groups, and other considerations to inform the most appropriate action for the candidate substance(s). The intent is to publish a summary of the results of this analysis for public comment. The 85 substances recommended for further scoping are proposed to be considered in 25 scoping exercises or problem formulation documents: 21 individual substances and 4 groups of substances (see Appendix B for the rationales and Appendix C for the substances included in the groups). During further scoping/problem formulation, these lists of substances may be further refined by removing substances or expanding to include additional similar substances not currently listed.

The need for additional data has been identified for 443 substances (see Appendix D). These substances were seen as having relevant hazard (442 substances) or exposure (1 substance) indicators, but require further data gathering to determine whether they could be priorities for risk assessment under CEPA (e.g., information is needed on the Canadian context). The most common scenario leading to a need for data gathering is when there is an indicator of hazard, yet the commercial status in Canada is uncertain. The options available for data gathering include, but are not limited to, addition to upcoming mandatory surveys conducted under section 71 of CEPA (e.g., DSL Inventory Updates, targeted surveys) as well as voluntary survey initiatives, research or surveillance and monitoring activities. Any data gathering results would then be considered in future review cycles.

Another 101 substances were identified as undergoing international activities (see Appendix E). Monitoring the outcomes of these international activities will inform what, if any, actions are required in future review cycles.

Finally, for the majority of substances evaluated within the 2019 IRAP review (15 629 substances), it was determined that there was not a sufficient basis for recommending further action at this time. These substances will continue to be considered in future IRAP review cycles.

[1] In previous IRAP cycles, substances were identified for risk assessment. In the 2019 cycle, risk assessment candidates were instead identified for further scoping/problem formulation. This approach allows for more flexibility and transparency in identifying an appropriate course of action for a substance or group of substances.

References

Canada, Dept. of the Environment. 2017. *Canada Environmental Protection Act, 1999: Notice with respect to substances included as part of the 2017 Inventory Update* [PDF]. Canada Gazette, Part I, vol. 151, no. 2, p. 89-161.

[ECCC] Environment and Climate Change Canada. 2017. Inventory Update data collected under the *Canadian Environmental Protection Act, 1999*, section 71: *Notice with respect to certain substances on the Domestic Substances List.* Data prepared by: Environment and Climate Change Canada, Health Canada; Existing Substances Program.

[ECCC, HC] Environment and Climate Change Canada, Health Canada. 2015. Identification of risk assessment priorities: results of the 2015 review. Ottawa (ON): Government of Canada.

[ECCC, HC] Environment and Climate Change Canada, Health Canada. 2016. Identification of risk assessment priorities (IRAP): results of the 2016 review. Gatineau (QC): Government of Canada.

[ECCC, HC] Environment and Climate Change Canada, Health Canada. 2017. Categorization of chemical substances. Gatineau (QC): Government of Canada.

[ECCC, HC] Environment and Climate Change Canada, Health Canada. 2018. Identification of risk assessment priorities (IRAP): results of the 2017-18 review. Gatineau (QC): Government of Canada.

Environment Canada, Health Canada. 2014. Approach for identification of chemicals and polymers as risk assessment priorities under Part 5 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999). Ottawa (ON): Government of Canada.

Appendix A. List of IRAP data sources

The following is a list of the sources considered within this IRAP review. The sources have been organized by the source type and category, as well as the main information they provided to the IRAP review; however, many represent sources of information for many streams within an IRAP review (e.g., a risk assessment may contain relevant information on use and volumes, consumer product indicators, monitoring and surveillance, and so on). It should be noted that the sources listed below reflect ones that are more readily searched systematically across all substances and that many additional sources may also be searched depending on the substance and the information available at the time of the review. For instance, an indication of use in consumer products may necessitate further searching for specific consumer products and availability to consumers in Canada (e.g., querying of Safety Data Sheet databases).

Hazard indicators

- California Environmental Protection Agency (CalEPA) Proposition 65
- Estrogen receptor (ER) actives (US EPA Endocrine Disruptor Screening Program (EDSP))
- European Centre for the Validation of Alternative Methods (ECVAM) Ames positive database
- European Chemicals Agency (ECHA) Annex III List (similar endpoints as GHS)
- ECHA Globally Harmonized System (GHS) of Classification and Labelling of Chemicals
    - Carcinogenicity
    - Germ cell mutagenicity
    - Reproductive toxicity
    - Specific target organ toxicity, repeated exposure
    - Effects on/via lactation
    - Hazardous to the aquatic environment, acute hazard
    - Hazardous to the aquatic environment, long term hazard
    - Hazardous to the ozone layer
- ECHA Notifications for Classification and Labelling under Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (not harmonized); used as an indicator of potential hazard for further follow-up in a review
- ECHA persistence, bioaccumulation and toxicity (PBT) list
    - Very persistent/persistent
    - Very bioaccumulative/bioaccumulative
    - Toxic (ecological)
- ECHA Substances of Very High Concern (SVHC)
- European Commission Adaptation to Technical Progress (ATP): historic, and largely ported to ECHA GHS
    - Cancer
    - Mutagenicity
    - Reproductive toxicity
    - Developmental toxicity
- European Commission developmental neurotoxicants
- European Commission endocrine disrupting chemical category
- European Commission evidence of endocrine disruption in humans database
- European Commission list of known or suspected hepatotoxins

- European Commission list of neurotoxins
- International Agency for Research on Cancer (IARC) cancer classifications
- International Chemical Secretariat (ChemSec) SIN (Substitute It Now) List: classified as carcinogenic, mutagenic or toxic to reproduction (CMR)
- International ChemSec SIN List: endocrine disrupting chemicals (EDCs)
- Japan GHS
- Japan Society for Occupational Health (JSOH)
    - Occupational carcinogens
    - Reproductive toxicants
- Organisation for Economic Cooperation and Development (OECD) no need to assess HPV list (low hazard)
- Positive androgen receptor (AR) actives (US EPA EDSP)
- Positive for steroidogenenesis (US EPA EDSP)
- SafeWork Australia Hazardous Chemical Information System (HCIS) GHS
- US Environmental Protection Agency (EPA) cancer classifications/guidelines (e.g., Integrated Risk Information System (IRIS))
- US EPA Design for the Environment (DfE) rating status/safer chemical list
- US National Toxicology Program (NTP) report on carcinogens

Exposure indicators

Use and volume data

- Canadian DSL nomination data (1984-1986)
- Canadian International Merchandise Trade Database (Statistics Canada)
- Canadian use and volume data from CEPA section 71 surveys, including:
    - DSL Inventory Update: Phase 1 (2009)
    - DSL Inventory Update: Phase 2 (2012)
    - Inventory Update 2017
    - Surveys from the CMP1 Challenge program (various years) and CMP2 Substance Grouping Initiative
    - Surveys from previous initiatives, e.g., Pilot survey (2001), Persistence, Bioaccumulation, and Inherent Toxicity (PBiT) survey (2006), Perfluoroalkylated Substances (PFAS) survey (2005)
    - Two surveys to provide information for the risk management of certain substances (summer and fall 2017)
- Chemical data reporting (CDR) under the US *Toxic Substances Control Act* (TSCA) data (1986-2016)
- REACH registration tonnage bands (Europe)

Consumer exposure indicators

- Cosmetic notifications under section 30 of the Cosmetic Regulations under the Canadian *Food and Drugs Act*
- Cosmetics reported under the Voluntary Cosmetic Reporting Program (VCRP) to the US Food and Drug Administration (FDA)
- Danish Environmental Protection Agency: consumer product surveys
- Danish Environmental Protection Agency: environmental project reports

- European Commission RAPEX (rapid alert system for dangerous non-food products)
- Household Product Database (US National Library of Medicine)
- Netherlands reports (Rijksinstituut voor Volksgezondheid en Milieu (RIVM) (National Institute for Public Health and the Environment) (e.g., letter reports)
- Notifications under REACH with consumer product use category(ies)
- Notifications under REACH with cosmetic/personal care product use
- Safety data sheets from various retailers and companies: Walmart, Canadian Tire, Home Hardware, Proctor and Gamble, SC Johnson, Chlorox, etc.
- US EPA chemical and product categories (CPCat)
- US EPA functional use database (FUse)

Biomonitoring

- Alberta biomonitoring program
- Canadian Health Measures Survey (CHMS): Cycles 1-4
- German environmental survey for children
- German Human Biomonitoring Commission (HBM)
- National Health and Nutrition Examination Survey (NHANES): 1999-2014 results (January 2017 version)

Environmental monitoring/surveillance

- Canadian National Air Pollutant (NAP) Surveillance Program
- Canadian National Pollutant Release Inventory (NPRI) 2012-2016
- ECCC monitoring and research programs and activities
- European Commission International Platform for Chemical Monitoring (IPCHeM)
- Health Canada research and monitoring and surveillance activities
- NORMAN EMPODAT Database (European-based monitoring and biomonitoring database on emerging contaminants in a variety of matrices)
- US Toxic Release Inventory (TRI)

Assessments and international activity

Reports and assessments (e.g., risk assessments)

- Agency for Toxic Substances and Disease Registry (ATSDR) toxicological profiles
- Australian Inventory and Multi-tiered Assessment and Prioritisation (IMAP) framework
- Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS) Priority Existing Chemical (PEC) reports
- Canadian Chemicals Management Plan (CMP) screening assessment reports
- Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQGs): air, groundwater, sediment, soil, surface water, tissue
- Canadian Priority Substances List (PSL) assessments
- ECHA Community Rolling Action Plan (CoRAP) evaluations
- ECHA Public Activities Coordination Tool (PACT), Risk Management Options Analysis (RMOA) and Informal Hazard Assessment reports
- ECHA REACH dossiers

- ECHA Substances of Very High Concern (SVHC) justification documents
- European Commission Scientific Committee on Consumer Safety (SCCS) opinions
- European Food Safety Authority (EFSA) scientific opinions and evaluations
- European Union Risk Assessment Reports (RARs)
- Health Canada Drinking Water Quality Guidelines
- Health Canada Indoor Air Reference Levels (IARL) for chronic exposure to volatile organic compounds summary document
- Health Canada Pest Management Regulatory Agency (PMRA) pesticide re-evaluation assessments
- IARC monographs
- Japan initial risk assessment reports
- Japan National Institute of Technology and Evaluation (NITE) database/assessment/reports
- Joint FAO/WHO Expert Committee on Food Additives Toxicological Monographs and Reports
- OECD Screening Information Datasets (SIDS)/SIDS Initial Assessment Reports (SIARs)
- UK Environmental Agency environmental risk evaluation reports
- UN Environmental Programme (UNEP) environmental health criteria documents
- US EPA assessments and problem formulations
- US EPA Integrated Risk Information System (IRIS) assessments
- World Health Organization (WHO) Concise International Chemical Assessment Documents (CICADs)

International activity

- CalEPA Proposition 65 list
- ECHA Prior Informed Consent (PIC)
- Maine chemicals of high concern/priority lists
- Minnesota chemicals of concern
- REACH Annex XIV Authorisation List
- REACH Annex XVII Restriction List
- REACH Registration List
- Rotterdam Convention provision - Prior Informed Consent (PIC) procedure
- Stockholm Convention on Persistent Organic Pollutants (POPs)
- US EPA export notification (e.g., formerly TSCA 12b)
- US EPA Significant New Use Rules (SNUR)
- Vermont chemicals of high concern
- Washington chemicals of high concern

Appendix B. Substances/groups identified for further scoping/problem formulation

Substance (CAS RN[a]) or group name	Number of substances[b]	Rationale for recommending further scoping/problem formulation
Alkylated polyaromatic compounds (PACs)	5	PACs are part of polycyclic aromatic hydrocarbon (PAH) mixtures and are often more abundant than their parent compounds. Exposures may occur along with other PAHs, including far-field exposures from anthropogenic and natural sources. Consumer uses were identified for some PAC substances. There is also a large body of literature on the impacts (i.e., bioaccumulation, hazard and exposure) on the environment, as well as evidence of potential carcinogenicity concerns similar or consistent with other PAHs. PAHs were assessed as part of the 1994 Priority Substances List (PSL) and, as a result, are found on the List of Toxic Substances (CEPA Schedule 1); however, PACs were not considered as part of this assessment.
Xylenes	4	These substances were previously assessed as part of the 1993 PSL xylenes assessment and found not to meet section 64 of CEPA. However, new uses not previously considered, including consumer uses, and large Canadian volumes have recently been identified from the 2017 Inventory Update (Canada 2017; ECCC 2017). There are also indications from biomonitoring data that Canadians may be exposed to these chemicals at levels greater than toxicologically defined exposure guidance values (e.g., US EPA IRIS reference dose value). Finally, there is international activity as they are part of an ongoing Community Rolling Action Plan (CoRAP) evaluation under the European Chemicals Agency (ECHA), in particular for neurotoxicity concerns.
Organic flame retardants	36	This group contains a variety of substances that are structurally related to organic flame retardants previously assessed as toxic under the Chemicals Management Plan (CMP) or could potentially be used as flame retardants. Some of these substances have hazard or exposure indicators as well.
Glymes/glycol ethers	19	Some substances in this group have been previously assessed as part of the CMP or the 2003 PSL 2-methoxy ethanol, 2-ethoxy ethanol, 2-butoxy ethanol assessment. Some substances were found to meet section 64 of CEPA, while others did not. In addition, some are subject to Significant New Activity (SNAc) provisions under CEPA. Some substances also have Significant New Use Rules (SNUR) under the *Toxic Substances Control Act* (TSCA) in the US. There are concerns that other similar substances have not been assessed and that there may be consumer uses that were not explicitly considered by the PSL assessment.

Substance (CAS RN[a]) or group name	Number of substances[b]	Rationale for recommending further scoping/problem formulation
Phenothiazin-5-ium, 3,7-bis(dimethylamino)-, chloride (61-73-4)	1	There is evidence of potential consumer exposure in Canada, including use in hair dyes, nail products, etc. This substance has also been identified as being active with the estrogen receptor and androgen receptor (as well as with steroidogenesis).
Formamide, N,N-dimethyl- (68-12-2)	1	This substance was previously assessed in the 2001 PSL N,N-dimethylformamide assessment, and found not to meet section 64 of CEPA. However, there is evidence of changes in the hazard profile of the substance compared to that evaluated in the PSL assessment. There is also evidence of consumer uses not previously considered.
Ethene, trichloro- (79-01-6)	1	This substance was previously assessed in the 1993 PSL trichloroethylene assessment and, as a result, is on the List of Toxic Substances (CEPA Schedule 1). There is now evidence of use since the 1993 PSL report in non-regulated sectors, such as consumer products, which were not previously considered and are not covered by existing risk management.
2-Furanmethanol, tetrahydro- (97-99-4)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. Potential consumer uses have been identified, and the substance has also been classified as category 1B (presumed human reproductive toxicant, largely based on animal evidence) through ECHA's Globally Harmonized System of Classification and Labelling of Chemicals (GHS).
Benzene, (1-methylethenyl)- (98-83-9)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. There are potential consumer uses, and it is anticipated to be a genotoxic carcinogen.
Benzenamine, N,N,4-trimethyl- (99-97-8)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2016) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. There are potential consumer uses, as well as indications of high hazard: the International Agency for Research on Cancer (IARC) has classified it as a Group 2B carcinogen (i.e., possibly carcinogenic to humans), as well as having a GHS classification for repeat dose toxicity.
Benzene, ethenyl- (100-42-5)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2016) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. In addition, this substance was previously assessed in the 1993 PSL Styrene assessment, and in a follow-up report in 2003, and it was found not to meet section 64 of CEPA.

Substance (CAS RN[a]) or group name	Number of substances[b]	Rationale for recommending further scoping/problem formulation
		The evaluation of carcinogenicity in the PSL assessment concluded that available "studies have limitations that preclude firm conclusions being drawn with respect to the carcinogenicity of styrene." Since then, this substance has been upgraded under IARC to a Group 2A carcinogen (i.e., probably carcinogenic in humans). In addition, there are current indications of consumer use and exposure that were not explicitly considered in the PSL assessment or follow-up report.
4H-1-Benzopyran-4-one, 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy- (117-39-5)	1	There is evidence of consumer exposure to this substance in Canada (e.g., use in personal care products). It has also been identified as being active with the estrogen receptor.
Phenol, 2,2'-methylenebis[6-(1,1-dimethylethyl)-4-methyl- (119-47-1)	1	The substance was assessed as part of the CMP in 2009 and found not to meet section 64 of CEPA. However, there is now evidence of its use in consumer products in Canada. It was also reviewed as part of ECHA's CoRAP and concluded with Reproductive Toxicity (category 1B - presumed human reproductive toxicant, largely based on animal evidence). Endocrine disrupting (ED) effects have also been investigated as part of ECHA's CoRAP with the following determination: evidence of ED effects was insufficient for the reproductive system, but that potential for thyroid effects could not be ruled out at this time.
1,6-Octadiene, 7-methyl-3-methylene- (123-35-3)	1	There is evidence of consumer use (in foods and cosmetics). There is also evidence for high hazard (i.e., IARC Group 2B carcinogen: possibly carcinogenic to humans).
Ethene, tetrachloro- (127-18-4)	1	This substance was previously assessed in the 1993 PSL tetrachloroethylene assessment and, as a result, is on the List of Toxic Substances (CEPA Schedule 1). There has since been international work on this substance. For example, the US EPA assessed this substance as "likely to be a human carcinogen" and toxic to the nervous system. Additional international work includes risk management measures based on human health concerns. There are also indications of potential uses and sources of exposure in Canada from use in non-regulated sectors, including consumer products, which were not previously considered, as well as indoor air sources.
2-Propenoic acid, 3-phenyl-, (E)- (140-10-3)	1	There is evidence of direct exposure from consumer use in Canada to this substance, including use(s) in personal care products. It has also been identified as being active with the estrogen receptor.

Substance (CAS RN[a]) or group name	Number of substances[b]	Rationale for recommending further scoping/problem formulation
4H-1-Benzopyran-4-one, 5,7-dihydroxy-2-(4-hydroxyphenyl)- (520-36-5)	1	There is evidence of direct exposure from consumer use in Canada to this substance, including use(s) in personal care products. It has also been identified as being active with the estrogen receptor and steroidogenesis.
2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (15625-89-5)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. This substance has since been classified under IARC as a Group 2B carcinogen (i.e., possibly carcinogenic to humans). It also has broad and ubiquitous use in personal care products/cosmetics in Canada, the US and elsewhere.
Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 2',4',5',7'-tetrabromo-3',6'-dihydroxy-, disodium salt (17372-87-1)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. There is evidence of direct exposure, including use(s) in personal care products, in Canada to this substance. It has also been identified as being active with the estrogen and androgen receptors.
Thioperoxydicarbonic diamide ($[(H_2N)C(S)]_2S_2$), tetraethyl- (97-77-8)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2016) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. A preliminary screening of the hazard and exposure data using a generic aquatic scenario suggests a potential risk. This substance is also in the same chemical class as thioperoxydicarbonic diamide $[(H_2N)C(S)]_2S_2$), tetramethyl (CAS RN 137-26-8; TMTD), which has been recently assessed under the CMP with a proposed toxic conclusion and has similar uses.
Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene- (127-91-3)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. It is also on the List of Toxic Substances (Schedule 1) as a volatile organic compound that participates in atmospheric photochemical reactions. ECHA's CoRAP evaluation has concluded that this substance is "very toxic to aquatic life" and "very toxic to aquatic life with long-lasting effects" with the potential for less severe classifications if verified with experimental data. In addition, Japan's GHS is also indicating acute and chronic aquatic hazard. A preliminary screening of the hazard and exposure data using a generic aquatic scenario suggests a potential risk.

Substance (CAS RN[a]) or group name	Number of substances[b]	Rationale for recommending further scoping/problem formulation
2-Butenedioic acid (Z)-, bis(2-ethylhexyl) ester (142-16-5)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2016) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. A preliminary screening of the hazard and exposure data using a generic aquatic scenario suggests a potential risk.
Cyclopenta[g]-2-benzopyran, 1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethyl- (1222-05-5)	1	This substance was previously identified for data gathering under IRAP (ECCC, HC 2015) and was subsequently part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. A preliminary screening of the hazard and exposure data using a generic aquatic scenario suggests a potential risk. This substance has also been included on the NORMAN List of Emerging Substances.
2-Propenoic acid, 2-cyano-3,3-diphenyl-, 2-ethylhexyl ester (6197-30-4)	1	This substance was part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. There are also indications of inherent toxicity, persistence and bioaccumulation, as well as increasing Canadian tonnage.
Refractory ceramic fibres	1	These substances have been assessed as part of the 1993 PSL mineral fibres (man-made vitreous fibres) assessment, and as a result are on the List of Toxic Substances (CEPA Schedule 1). These substances were also part of the 2017 Inventory Update (Canada 2017; ECCC 2017) to identify Canadian use and quantities. New uses were identified that were not previously considered.

[a]CAS RN: Chemical Abstracts Service Registry Number.

[b]During further scoping/problem formulation, the list of substances may be further refined or expanded to include additional similar substances not currently listed. Substance identities for the groups are listed in Appendix C.

Appendix C. Identity of substances within a group recommended for further scoping/problem formulation

CAS RN[a]	Substance name[b]	Group
56-49-5	Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-	Alkylated PACs[c]
90-12-0	Naphthalene, 1-methyl-	Alkylated PACs[c]
91-57-6	Naphthalene, 2-methyl-	Alkylated PACs[c]
779-02-2	Anthracene, 9-methyl-	Alkylated PACs[c]
1321-94-4	Naphthalene, methyl-	Alkylated PACs[c]
95-47-6	Benzene, 1,2-dimethyl-	Xylenes
106-42-3	Benzene, 1,4-dimethyl-	Xylenes
108-38-3	Benzene, 1,3-dimethyl-	Xylenes
1330-20-7	Benzene, dimethyl-	Xylenes
78-43-3	1-Propanol, 2,3-dichloro-, phosphate (3:1)	Organic flame retardants
79-94-7	Phenol, 4,4'-(1-methylethylidene)bis[2,6-dibromo-	Organic flame retardants
87-82-1	Benzene, hexabromo-	Organic flame retardants
87-83-2	Benzene, pentabromomethyl-	Organic flame retardants
101-02-0	Phosphorous acid, triphenyl ester	Organic flame retardants
115-98-0	Phosphonic acid, ethenyl-, bis(2-chloroethyl) ester	Organic flame retardants
121-45-9	Phosphorous acid, trimethyl ester	Organic flame retardants
122-52-1	Phosphorous acid, triethyl ester	Organic flame retardants
126-71-6	Phosphoric acid, tris(2-methylpropyl) ester	Organic flame retardants
126-72-7	Tris(2,3-dibromopropyl) phosphate	Organic flame retardants
126-73-8	Phosphoric acid tributyl ester	Organic flame retardants
140-08-9	Ethanol, 2-chloro-, phosphite (3:1)	Organic flame retardants
306-52-5	Ethanol, 2,2,2-trichloro-, dihydrogen phosphate	Organic flame retardants
512-56-1	Phosphoric acid, trimethyl ester	Organic flame retardants
608-90-2	Pentabromobenzene	Organic flame retardants
756-79-6	Phosphonic acid, methyl-, dimethyl ester	Organic flame retardants
762-04-9	Phosphonic acid, diethyl ester	Organic flame retardants
1241-94-7	Phosphoric acid, 2-ethylhexyl diphenyl ester	Organic flame retardants
2524-03-0	Phosphorochloridothioic acid, O,O-dimethyl ester	Organic flame retardants
2524-04-1	Phosphorochloridothioic acid, O,O-diethyl ester	Organic flame retardants
3322-93-8	Cyclohexane, 1,2-dibromo-4-(1,2-dibromoethyl)-	Organic flame retardants
4351-70-6	Phosphonic acid, [1-[[(2-chloroethoxy)(2-	Organic flame retardants
6145-73-9	1-Propanol, 2-chloro-, phosphate (3:1)	Organic flame retardants
6294-34-4	Phosphonic acid, (2-chloroethyl)-, bis(2-	Organic flame retardants
6749-73-1	2-Propanol, 1,3-dichloro-, phosphite (3:1)	Organic flame retardants

19186-97-1	Tris[2,2-bis(bromomethyl)-3-bromopropyl]-	Organic flame retardants
26444-49-5	Phosphoric acid, methylphenyl diphenyl ester	Organic flame retardants
33125-86-9	Phosphoric acid, 1,2-ethanediyl tetrakis(2-	Organic flame retardants
37853-59-1	Benzene, 1,1'-[1,2-ethanediylbis(oxy)]bis[2,4,6-	Organic flame retardants
38051-10-4	Phosphoric acid, 2,2-bis(chloromethyl)-1,3-	Organic flame retardants
42757-55-1	Benzene, 1,1'-sulfonylbis[3,5-dibromo-4-(2,3-	Organic flame retardants
53461-82-8	Phosphoric acid, oxydi-2,1-ethanediyl tetrakis(2-	Organic flame retardants
58823-09-9	Phosphonic acid, [2-[[(2-chloroethoxy)(2-	Organic flame retardants
61090-89-9	2,4,8,10-Tetraoxa-3,9-	Organic flame retardants
66108-37-0	Phosphoric acid, 2,2-bis(bromomethyl)-3-	Organic flame retardants
95906-11-9	Phenol, 2,4-bis(1,1-dimethylethyl)-, 1,1',1''-	Organic flame retardants
109-59-1	Ethanol, 2-(1-methylethoxy)-	Glymes/glycol ethers
109-86-4	Ethanol, 2-methoxy-	Glymes/glycol ethers
110-49-6	Ethanol, 2-methoxy-, acetate	Glymes/glycol ethers
110-71-4	Ethane, 1,2-dimethoxy-	Glymes/glycol ethers
110-80-5	Ethanol, 2-ethoxy-	Glymes/glycol ethers
111-76-2	Ethanol, 2-butoxy-	Glymes/glycol ethers
111-96-6	Ethane, 1,1'-oxybis[2-methoxy-	Glymes/glycol ethers
112-36-7	Ethane, 1,1'-oxybis[2-ethoxy-	Glymes/glycol ethers
112-49-2	2,5,8,11-Tetraoxadodecane	Glymes/glycol ethers
112-73-2	Butane, 1,1'-[oxybis(2,1-ethanediyloxy)]bis-	Glymes/glycol ethers
143-24-8	2,5,8,11,14-Pentaoxapentadecane	Glymes/glycol ethers
629-14-1	1,2-diethoxyethane	Glymes/glycol ethers
2807-30-9	Ethanol, 2-propoxy-	Glymes/glycol ethers
4353-28-0	3,6,9,12,15-Pentaoxaheptadecane	Glymes/glycol ethers
23601-39-0	3,6,9,12,15,18-Hexaoxaeicosane	Glymes/glycol ethers
24991-55-7	Poly(oxy-1,2-ethanediyl), α-methyl-ω-methoxy-	Glymes/glycol ethers
31885-97-9	Poly(oxy-1,2-ethanediyl), α-butyl-ω-butoxy-	Glymes/glycol ethers
51105-00-1	5,8,11,14,17,20-Hexaoxatetracosane	Glymes/glycol ethers
63512-36-7	5,8,11,14-Tetraoxaoctadecane	Glymes/glycol ethers

[a]CAS RN: Chemical Abstracts Service Registry Number.

[b]During further scoping/problem formulation, the list of substances may be further refined or expanded to include additional similar substances not currently listed.

[c]PACs: Polyaromatic compounds.

Appendix D. Substances identified for hazard or exposure data gathering

CAS RN[a]	Substance name	Recommended data gathering
50-78-2	Benzoic acid, 2-(acetyloxy)-	Exposure
51-28-5	Phenol, 2,4-dinitro-	Exposure
51-30-9	1,2-Benzenediol, 4-[1-hydroxy-2-[(1-methylethyl)amino]ethyl]-, hydrochloride	Exposure
54-11-5	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-	Exposure
55-63-0	1,2,3-Propanetriol, trinitrate	Exposure
57-27-2	Morphinan-3,6-diol, 7,8-didehydro-4,5-epoxy-17-methyl-(5α,6α)-	Exposure
57-57-8	2-Oxetanone	Exposure
57-68-1	Benzenesulfonamide, 4-amino-N-(4,6-dimethyl-2-pyrimidinyl)-	Exposure
57-83-0	Pregn-4-ene-3,20-dione	Exposure
58-55-9	1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl-	Exposure
61-68-7	Benzoic acid, 2-[(2,3-dimethylphenyl)amino]-	Exposure
63-25-2	1-Naphthalenol, methylcarbamate	Exposure
64-69-7	Acetic acid, iodo-	Exposure
65-45-2	Benzamide, 2-hydroxy-	Exposure
66-71-7	1,10-Phenanthroline	Exposure
68-35-9	Benzenesulfonamide, 4-amino-N-2-pyrimidinyl-	Exposure
75-01-4	Ethene, chloro-	Exposure
75-31-0	2-Propanamine	Exposure
75-83-2	Butane, 2,2-dimethyl-	Exposure
78-30-8	Phosphoric acid, tris(2-methylphenyl) ester	Exposure
78-78-4	Butane, 2-methyl-	Exposure
79-29-8	Butane, 2,3-dimethyl-	Exposure
79-57-2	2-Naphthacenecarboxamide, 4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,5,6,10,12,12a-hexahydroxy-6-methyl-1,11-dioxo-, [4S-(4α,4aα,5α,5aα,6β,12aα)]-	Exposure
80-04-6	Cyclohexanol, 4,4'-(1-methylethylidene)bis-	Exposure
81-64-1	9,10-Anthracenedione, 1,4-dihydroxy-	Exposure
82-45-1	9,10-Anthracenedione, 1-amino-	Exposure
84-15-1	1,1':2',1''-Terphenyl	Exposure
87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro-	Exposure
88-04-0	Phenol, 4-chloro-3,5-dimethyl-	Exposure
88-75-5	Phenol, 2-nitro-	Exposure
90-02-8	Benzaldehyde, 2-hydroxy-	Exposure
90-15-3	1-Naphthalenol	Exposure
91-53-2	Quinoline, 6-ethoxy-1,2-dihydro-2,2,4-trimethyl-	Exposure
92-43-3	3-Pyrazolidinone, 1-phenyl-	Exposure
92-94-4	1,1':4',1''-Terphenyl	Exposure
93-65-2	Propanoic acid, 2-(4-chloro-2-methylphenoxy)-	Exposure

CAS RN[a]	Substance name	Recommended data gathering
93-83-4	9-Octadecenamide, N,N-bis(2-hydroxyethyl)-, (Z)-	Exposure
95-13-6	1H-Indene	Exposure
95-32-9	Benzothiazole, 2-(4-morpholinyldithio)-	Exposure
97-86-9	2-Propenoic acid, 2-methyl-, 2-methylpropyl ester	Exposure
98-29-3	Phenol, 2-(1-methylethyl)-4,6-dinitro-	Exposure
98-85-1	Benzenemethanol, α-methyl-	Exposure
98-94-2	Cyclohexanamine, N,N-dimethyl-	Exposure
99-65-0	Benzene, 1,3-dinitro-	Exposure
99-85-4	1,4-Cyclohexadiene, 1-methyl-4-(1-methylethyl)-	Exposure
100-02-7	Phenol, 4-nitro-	Exposure
100-25-4	Benzene, 1,4-dinitro-	Exposure
100-47-0	Benzonitrile	Exposure
100-61-8	Benzenamine, N-methyl-	Exposure
101-54-2	1,4-Benzenediamine, N-phenyl-	Exposure
102-09-0	Carbonic acid, diphenyl ester	Exposure
102-81-8	Ethanol, 2-(dibutylamino)-	Exposure
103-29-7	Benzene, 1,1'-(1,2-ethanediyl)bis-	Exposure
103-65-1	Benzene, propyl-	Exposure
104-51-8	Benzene, butyl-	Exposure
106-51-4	2,5-Cyclohexadiene-1,4-dione	Exposure
106-93-4	Ethane, 1,2-dibromo-	Exposure
106-99-0	1,3-Butadiene	Exposure
107-03-9	1-Propanethiol	Exposure
107-06-2	Ethane, 1,2-dichloro-	Exposure
107-39-1	1-Pentene, 2,4,4-trimethyl-	Exposure
107-83-5	Pentane, 2-methyl-	Exposure
107-86-8	2-Butenal, 3-methyl-	Exposure
108-18-9	2-Propanamine, N-(1-methylethyl)-	Exposure
108-42-9	Benzenamine, 3-chloro-	Exposure
109-66-0	Pentane	Exposure
109-72-8	Lithium, butyl-	Exposure
109-89-7	Ethanamine, N-ethyl-	Exposure
110-18-9	1,2-Ethanediamine, N,N,N',N'-tetramethyl-	Exposure
111-44-4	Ethane, 1,1'-oxybis[2-chloro-	Exposure
111-65-9	Octane	Exposure
111-86-4	1-Octanamine	Exposure
111-92-2	1-Butanamine, N-butyl-	Exposure
112-24-3	1,2-Ethanediamine, N,N'-bis(2-aminoethyl)-	Exposure
112-41-4	1-Dodecene	Exposure
112-57-2	1,2-Ethanediamine, N-(2-aminoethyl)-N'-[2-[(2-aminoethyl)amino]ethyl]-	Exposure
114-26-1	Phenol, 2-(1-methylethoxy)-, methylcarbamate	Exposure

CAS RN[a]	Substance name	Recommended data gathering
115-18-4	3-Buten-2-ol, 2-methyl-	Exposure
116-16-5	2-Propanone, 1,1,1,3,3,3-hexachloro-	Exposure
117-08-8	1,3-Isobenzofurandione, 4,5,6,7-tetrachloro-	Exposure
118-52-5	2,4-Imidazolidinedione, 1,3-dichloro-5,5-dimethyl-	Exposure
118-75-2	2,5-Cyclohexadiene-1,4-dione, 2,3,5,6-tetrachloro-	Exposure
120-32-1	Phenol, 4-chloro-2-(phenylmethyl)-	Exposure
120-95-6	Phenol, 2,4-bis(1,1-dimethylpropyl)-	Exposure
121-29-9	Cyclopropanecarboxylic acid, 3-(3-methoxy-2-methyl-3-oxo-1-propenyl)-2,2-dimethyl-, 2-methyl-4-oxo-3-(2,4-pentadienyl)-2-cyclopenten-1-yl ester, [1R-[1α[S(Z)],3β(E)]]-	Exposure
122-34-9	1,3,5-Triazine-2,4-diamine, 6-chloro-N,N'-diethyl-	Exposure
122-40-7	Heptanal, 2-(phenylmethylene)-	Exposure
123-05-7	Hexanal, 2-ethyl-	Exposure
123-91-1	1,4-Dioxane	Exposure
124-65-2	Arsinic acid, dimethyl-, sodium salt	Exposure
127-79-7	Benzenesulfonamide, 4-amino-N-(4-methyl-2-pyrimidinyl)-	Exposure
130-37-0	2-Naphthalenesulfonic acid, 1,2,3,4-tetrahydro-2-methyl-1,4-dioxo-, sodium salt	Exposure
131-27-1	1,5-Naphthalenedisulfonic acid, 3-amino-	Exposure
137-42-8	Carbamodithioic acid, methyl-, monosodium salt	Exposure
138-86-3	Cyclohexene, 1-methyl-4-(1-methylethenyl)-	Exposure
140-88-5	2-Propenoic acid, ethyl ester	Exposure
142-84-7	1-Propanamine, N-propyl-	Exposure
142-90-5	2-Propenoic acid, 2-methyl-, dodecyl ester	Exposure
143-18-0	9-Octadecenoic acid (Z)-, potassium salt	Exposure
147-24-0	Ethanamine, 2-(diphenylmethoxy)-N,N-dimethyl-, hydrochloride	Exposure
335-24-0	Cyclohexanesulfonic acid, 1,2,2,3,3,4,5,5,6,6-decafluoro-4-(1,1,2,2,2-pentafluoroethyl)-, potassium salt (1:1)	Hazard
359-83-1	2,6-Methano-3-benzazocin-8-ol,1,2,3,4,5,6-hexahydro-6,11-dimethyl-3-(3-methyl-2-butenyl)-,(2R,6R,11R)-rel-	Exposure
463-82-1	Propane, 2,2-dimethyl-	Exposure
533-74-4	2H-1,3,5-Thiadiazine-2-thione, tetrahydro-3,5-dimethyl-	Exposure
534-17-8	Carbonic acid, dicesium salt	Exposure
534-52-1	Phenol, 2-methyl-4,6-dinitro-	Exposure
537-01-9	Carbonic acid, cerium(3++) salt (3:2)	Exposure
543-90-8	Acetic acid, cadmium salt	Exposure
545-06-2	Acetonitrile, trichloro-	Exposure
546-89-4	Acetic acid, lithium salt	Exposure
552-38-5	Benzoic acid, 2-hydroxy-, monolithium salt	Exposure
554-13-2	Carbonic acid, dilithium salt	Exposure
556-63-8	Formic acid, lithium salt	Exposure

CAS RN[a]	Substance name	Recommended data gathering
564-25-0	2-Naphthacenecarboxamide, 4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-, (4S,4aR,5S,5aR,6R,12aS)-	Exposure
576-26-1	Phenol, 2,6-dimethyl-	Exposure
586-62-9	Cyclohexene, 1-methyl-4-(1-methylethylidene)-	Exposure
587-26-8	Carbonic acid, lanthanum(3++) salt (3:2)	Exposure
591-27-5	Phenol, 3-amino-	Exposure
591-76-4	Hexane, 2-methyl-	Exposure
609-93-8	Phenol, 4-methyl-2,6-dinitro-	Exposure
612-83-9	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dichloro-, dihydrochloride	Exposure
623-08-5	Benzenamine, N,4-dimethyl-	Exposure
624-18-0	1,4-Benzenediamine, dihydrochloride	Exposure
653-14-5	Benzoic acid, 2-hydroxy-3,5-diiodo-, monolithium salt	Exposure
723-46-6	Benzenesulfonamide, 4-amino-N-(5-methyl-3-isoxazolyl)-	Exposure
731-27-1	Methanesulfenamide, 1,1-dichloro-N-[(dimethylamino)sulfonyl]-1-fluoro-N-(4-methylphenyl)-	Exposure
818-61-1	2-Propenoic acid, 2-hydroxyethyl ester	Exposure
828-00-2	1,3-Dioxan-4-ol, 2,6-dimethyl-, acetate	Exposure
836-30-6	Benzenamine, 4-nitro-N-phenyl-	Exposure
867-55-0	Propanoic acid, 2-hydroxy-, monolithium salt	Exposure
882-33-7	Disulfide, diphenyl	Exposure
917-70-4	Acetic acid, lanthanum(3++) salt	Exposure
1071-83-6	Glycine, N-(phosphonomethyl)-	Exposure
1085-98-9	Methanesulfenamide, 1,1-dichloro-N-[(dimethylamino)sulfonyl]-1-fluoro-N-phenyl-	Exposure
1116-76-3	1-Octanamine, N,N-dioctyl-	Exposure
1120-21-4	Undecane	Exposure
1138-52-9	Phenol, 3,5-bis(1,1-dimethylethyl)-	Exposure
1214-39-7	1H-Purin-6-amine, N-(phenylmethyl)-	Exposure
1306-38-3	Cerium oxide (CeO_2)	Exposure
1308-96-9	Europium oxide (Eu_2O_3)	Exposure
1310-65-2	Lithium hydroxide (Li(OH))	Exposure
1312-81-8	Lanthanum oxide (La_2O_3)	Exposure
1313-96-8	Niobium oxide (Nb_2O_5)	Exposure
1313-97-9	Neodymium oxide (Nd_2O_3)	Exposure
1314-36-9	Yttrium oxide (Y_2O_3)	Exposure
1314-37-0	Ytterbium oxide (Yb_2O_3)	Exposure
1314-61-0	Tantalum oxide (Ta_2O_5)	Exposure
1643-20-5	1-Dodecanamine, N,N-dimethyl-, N-oxide	Exposure
1717-00-6	Ethane, 1,1-dichloro-1-fluoro-	Exposure
1758-73-2	Methanesulfinic acid, aminoimino-	Exposure
1948-33-0	1,4-Benzenediol, 2-(1,1-dimethylethyl)-	Exposure

CAS RN[a]	Substance name	Recommended data gathering
2044-56-6	Sulfuric acid, monododecyl ester, lithium salt	Exposure
2050-92-2	1-Pentanamine, N-pentyl-	Exposure
2051-79-8	1,4-Benzenediamine, N4,N4-diethyl-2-methyl-, monohydrochloride	Exposure
2094-99-7	Benzene, 1-(1-isocyanato-1-methylethyl)-3-(1-methylethenyl)-	Exposure
2095-01-4	1,3-Benzenediamine, 4,6-diethyl-2-methyl-	Exposure
2095-02-5	1,3-Benzenediamine, 2,4-diethyl-6-methyl-	Exposure
2223-93-0	Octadecanoic acid, cadmium salt	Exposure
2224-33-1	2-Butanone, O,O',O''-(ethenylsilylidyne)trioxime	Exposure
2226-96-2	1-Piperidinyloxy, 4-hydroxy-2,2,6,6-tetramethyl	Exposure
2244-21-5	1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3-dichloro-, potassium salt	Exposure
2439-10-3	Guanidine, dodecyl-, monoacetate	Exposure
2447-57-6	Benzenesulfonamide, 4-amino-N-(5,6-dimethoxy-4-pyrimidinyl)-	Exposure
2528-36-1	Phosphoric acid, dibutyl phenyl ester	Exposure
2634-33-5	1,2-Benzisothiazol-3(2H)-one	Exposure
2687-94-7	1-Octyl-2-Pyrrolidinone	Exposure
2687-96-9	2-Pyrrolidinone, 1-dodecyl-	Exposure
3006-82-4	Hexaneperoxoic acid, 2-ethyl-, 1,1-dimethylethyl ester	Exposure
3033-77-0	Oxiranemethanaminium, N,N,N-trimethyl-, chloride	Exposure
3248-91-7	Benzenamine, 4-[(4-amino-3-methylphenyl)(4-imino-3-methyl-2,5-cyclohexadien-1-ylidene)methyl]-2-methyl-, monohydrochloride	Exposure
3332-27-2	1-Tetradecanamine, N,N-dimethyl-, N-oxide	Exposure
3396-11-0	Acetic acid, cesium salt	Exposure
3495-36-1	Formic acid, cesium salt	Exposure
3825-26-1	Octanoic acid, pentadecafluoro-, ammonium salt	Exposure
3884-95-5	Phenol, 2-(1,1,3,3-tetramethylbutyl)-	Exposure
4111-54-0	2-Propanamine, N-(1-methylethyl)-, lithium salt	Exposure
4130-42-1	Phenol, 2,6-bis(1,1-dimethylethyl)-4-ethyl-	Exposure
4162-45-2	Ethanol, 2,2'-[(1-methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxy]]bis-	Exposure
4485-12-5	Octadecanoic acid, lithium salt	Exposure
4499-91-6	Docosanoic acid, lithium salt	Exposure
5895-52-3	Carbonic acid, ytterbium(3++) salt (3:2)	Exposure
6317-18-6	Thiocyanic acid, methylene ester	Exposure
6362-80-7	Benzene, 1,1'-(1,1-dimethyl-3-methylene-1,3-propanediyl)bis-	Exposure
6369-59-1	1,4-Benzenediamine, 2-methyl-, sulfate	Exposure
6471-78-9	Benzenesulfonic acid, 4-amino-5-methoxy-2-methyl-	Exposure
6531-45-9	Propanoic acid, lithium salt	Exposure
7128-91-8	1-Hexadecanamine, N,N-dimethyl-, N-oxide	Exposure
7435-02-1	Octanoic acid, cerium salt	Exposure
7439-91-0	Lanthanum	Exposure
7439-93-2	Lithium	Exposure

CAS RN[a]	Substance name	Recommended data gathering
7439-94-3	Lutetium	Exposure
7440-00-8	Neodymium	Exposure
7440-03-1	Niobium	Exposure
7440-10-0	Praseodymium	Exposure
7440-19-9	Samarium	Exposure
7440-25-7	Tantalum	Exposure
7440-30-4	Thulium	Exposure
7440-45-1	Cerium	Exposure
7440-64-4	Ytterbium	Exposure
7440-65-5	Yttrium	Exposure
7440-74-6	Indium	Exposure
7447-41-8	Lithium chloride (LiCl)	Exposure
7550-35-8	Lithium bromide (LiBr)	Exposure
7620-77-1	Octadecanoic acid, 12-hydroxy-, monolithium salt	Exposure
7637-03-8	Sulfuric acid, ammonium cerium(4++) salt (4:4:1)	Exposure
7647-17-8	Cesium chloride (CsCl)	Exposure
7647-18-9	Antimony chloride ($SbCl_5$)	Exposure
7659-86-1	Acetic acid, mercapto-, 2-ethylhexyl ester	Exposure
7705-14-8	Cyclohexene, 1-methyl-4-(1-methylethenyl)-, (±)-	Exposure
7721-01-9	Tantalum chloride ($TaCl_5$)	Exposure
7758-88-5	Cerium fluoride (CeF_3)	Exposure
7772-99-8	Tin chloride ($SnCl_2$)	Exposure
7782-65-2	Germane	Exposure
7782-89-0	Lithium amide ($Li(NH_2)$)	Exposure
7789-18-6	Nitric acid, cesium salt	Exposure
7789-24-4	Lithium fluoride (LiF)	Exposure
7790-69-4	Nitric acid, lithium salt	Exposure
7790-86-5	Cerium chloride ($CeCl_3$)	Exposure
7791-03-9	Perchloric acid, lithium salt	Exposure
8006-80-2	Oils, sassafras	Exposure
8052-41-3	Stoddard solvent	Exposure
9016-91-5	Benzenesulfonic acid, ethenyl-, homopolymer, lithium salt	Exposure
10024-93-8	Neodymium chloride ($NdCl_3$)	Exposure
10025-74-8	Dysprosium chloride ($DyCl_3$)	Exposure
10035-10-6	Hydrobromic acid	Exposure
10042-88-3	Terbium chloride ($TbCl_3$)	Exposure
10099-58-8	Lanthanum chloride ($LaCl_3$)	Exposure
10099-59-9	Nitric acid, lanthanum(3++) salt	Exposure
10108-73-3	Cerium (3+) nitrate	Exposure
10138-41-7	Erbium chloride ($ErCl_3$)	Exposure
10138-52-0	Gadolinium chloride ($GdCl_3$)	Exposure

CAS RN[a]	Substance name	Recommended data gathering
10138-62-2	Holmium chloride ($HoCl_3$)	Exposure
10168-81-7	Nitric acid, gadolinium(3++) salt	Exposure
10294-54-9	Sulfuric acid, dicesium salt	Exposure
10361-79-2	Praseodymium chloride ($PrCl_3$)	Exposure
10361-82-7	Samarium chloride ($SmCl_3$)	Exposure
10361-92-9	Yttrium chloride (YCl_3)	Exposure
10361-93-0	Nitric acid, yttrium(3++) salt	Exposure
10377-48-7	Sulfuric acid, dilithium salt	Exposure
10377-51-2	Lithium iodide (LiI)	Exposure
12007-60-2	Boron lithium oxide ($B4Li_2O_7$)	Exposure
12008-21-8	Lanthanum boride (LaB_6), (OC-6-11)-	Exposure
12014-56-1	Cerium hydroxide ($Ce(OH)_4$), (ß-4)-	Exposure
12032-20-1	Lutetium oxide (Lu_2O_3)	Exposure
12033-62-4	Tantalum nitride (TaN)	Exposure
12036-32-7	Praseodymium oxide (Pr_2O_3)	Exposure
12036-44-1	Thulium oxide (Tm_2O_3)	Exposure
12037-29-5	Praseodymium oxide (Pr_6O_{11})	Exposure
12057-24-8	Lithium oxide (Li_2O)	Exposure
12060-08-1	Scandium oxide (Sc_2O_3)	Exposure
12060-58-1	Samarium oxide (Sm_2O_3)	Exposure
12061-16-4	Erbium oxide (Er_2O_3)	Exposure
12064-62-9	Gadolinium oxide (Gd_2O_3)	Exposure
12069-94-2	Niobium carbide (NbC)	Exposure
12070-06-3	Tantalum carbide (TaC)	Exposure
12439-78-0	Ytterbium oxide sulfide (Yb_2O_2S)	Exposure
12515-32-1	Cerium tin oxide ($Ce_2Sn_2O_7$)	Exposure
12627-14-4	Silicic acid, lithium salt	Exposure
13048-33-4	2-Propenoic acid, 1,1'-(1,6-hexanediyl) ester	Exposure
13171-00-1	Ethanone, 1-[6-(1,1-dimethylethyl)-2,3-dihydro-1,1-dimethyl-1H-inden-4-yl]-	Exposure
13453-69-5	Boric acid (HBO_2), lithium salt	Exposure
13453-87-7	Sulfurous acid, dilithium salt	Exposure
13454-72-3	Metaphosphoric acid (HPO_3), cerium(3++) salt	Exposure
13454-94-9	Sulfuric acid, cerium(3++) salt (3:2)	Exposure
13587-19-4	Tungstate (WO_4^{2}-), dicesium, (ß-4)-	Exposure
13590-82-4	Sulfuric acid, cerium(4++) salt (2:1)	Exposure
13709-38-1	Lanthanum fluoride (LaF_3)	Exposure
13709-49-4	Yttrium fluoride (YF_3)	Exposure
13718-26-8	Vanadate (VO_3^{1}-), sodium	Exposure
13824-95-8	Hypobromous acid, lithium salt	Exposure
13840-33-0	Hypochlorous acid, lithium salt	Exposure

CAS RN[a]	Substance name	Recommended data gathering
13952-84-6	2-Butanamine	Exposure
14054-87-6	Europium, tris[4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedionato-O,O']-	Exposure
14475-17-3	Carbonic acid, praseodymium salt	Exposure
14475-18-4	Carbonic acid, neodymium salt	Exposure
14484-64-1	Iron, tris(dimethylcarbamodithioato-S,S')-, (OC-6-11)-	Exposure
14552-19-3	Europium, tris(4,4,4-trifluoro-1-phenyl-1,3-butanedionato-O,O')-	Exposure
15087-24-8	Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-3-(phenylmethylene)-	Exposure
15467-06-8	9-Octadecenoic acid, 12-hydroxy-, monolithium salt, [R-(Z)]-	Exposure
15687-27-1	Benzeneacetic acid, α-methyl-4-(2-methylpropyl)-	Exposure
15785-09-8	Cerium hydroxide ($Ce(OH)_3$)	Exposure
15879-93-3	α-D-Glucofuranose, 1,2-O-(2,2,2-trichloroethylidene)-, (R)-	Exposure
16774-21-3	Cerate(2-), hexakis(nitrato-O)-, diammonium, (OC-6-11)-	Exposure
16853-85-3	Aluminate(1-), tetrahydro-, lithium, (ß-4)-	Exposure
16871-90-2	Silicate(2-), hexafluoro-, dipotassium	Exposure
18390-55-1	Phenol, 2,4,6-trinitro-, lithium salt	Exposure
19597-69-4	Lithium azide ($Li(N_3)$)	Exposure
19812-92-1	[1,1'-Biphenyl]-4-ol, 4'-(1,1-dimethylethyl)-	Exposure
19870-74-7	1H-3a,7-Methanoazulene, octahydro-6-methoxy-3,6,8,8-tetramethyl-, [3R-(3α,3aβ,6β,7β,8aα)]-	Exposure
21245-02-3	Benzoic acid, 4-(dimethylamino)-, 2-ethylhexyl ester	Exposure
21351-79-1	Cesium hydroxide (Cs(OH))	Exposure
21725-46-2	Propanenitrile, 2-[[4-chloro-6-(ethylamino)-1,3,5-triazin-2-yl]amino]-2-methyl-	Exposure
22288-41-1	Propaneperoxic acid, 2, 2-dimethyl-,1,1,3,3,-tetramethylbutyl ester	Exposure
22750-57-8	Cesium azide ($Cs(N_3)$)	Exposure
22781-23-3	1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methylcarbamate	Exposure
22984-54-9	2-Butanone, O,O',O''-(methylsilylidyne)trioxime	Exposure
24307-26-4	Piperidinium, 1,1-dimethyl-, chloride	Exposure
25155-30-0	Benzenesulfonic acid, dodecyl-, sodium salt	Exposure
25327-89-3	Benzene, 1,1'-(1-methylethylidene)bis[3,5-dibromo-4-(2-propenyloxy)-	Exposure
25510-41-2	29H,31H-Phthalocyanine, dilithium salt	Exposure
25646-71-3	Methanesulfonamide, N-[2-[(4-amino-3-methylphenyl)ethylamino]ethyl]-, sulfate (2:3)	Exposure
25646-77-9	Ethanol, 2-[(4-amino-3-methylphenyl)ethylamino]-, sulfate (1:1) (salt)	Exposure
25880-71-1	Carbonic acid, samarium salt	Exposure
26530-20-1	3(2H)-Isothiazolone, 2-octyl-	Exposure
27193-28-8	Phenol, (1,1,3,3-tetramethylbutyl)-	Exposure
27253-30-1	Neodecanoic acid, lithium salt	Exposure
28214-91-7	Naphthalenesulfonic acid, dinonyl-, lithium salt	Exposure
29081-56-9	1-Octanesulfonic acid, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro-, ammonium salt	Exposure
29590-42-9	2-Propenoic acid, isooctyl ester	Exposure

CAS RN[a]	Substance name	Recommended data gathering
29935-35-1	Arsenate(1-), hexafluoro-, lithium	Exposure
31810-89-6	9,10-Anthracenedione, 1,5-diaminobromo-4,8-dihydroxy-	Exposure
33454-82-9	Methanesulfonic acid, trifluoro-, lithium salt	Exposure
34036-80-1	2-Butanone, O,O'O''-(phenylsilylidyne)trioxime	Exposure
34895-26-6	2-Butenedioic acid (Z)-, lithium salt	Exposure
35342-16-6	7-Benzothiazolesulfonic acid, 2-[4-[(hexahydro-2,4,6-trioxo-5-pyrimidinyl)azo]phenyl]-6-methyl-, monolithium salt	Exposure
38304-91-5	2,4-Pyrimidinediamine, 6-(1-piperidinyl)-, 3-oxide	Exposure
38900-29-7	Nonanedioic acid, dilithium salt	Exposure
38970-76-2	Benzoic acid, 2-hydroxy-, dilithium salt	Exposure
41637-38-1	Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propenyl)oxy]-	Exposure
42200-33-9	2,3-Naphthalenediol, 5-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]-1,2,3,4-tetrahydro-	Exposure
50594-66-6	Benzoic acid, 5-[2-chloro-4-(trifluoromethyl)phenoxy]-2-nitro-	Exposure
51988-24-0	Benzenesulfonic acid, 3-[[4-[(4-hydroxy-3-methylphenyl)azo]-3-methoxyphenyl]azo]-, monolithium salt	Exposure
52236-73-4	Benzenesulfonic acid, 4-[(5-amino-3-methyl-1-phenyl-1H-pyrazol-4-yl)azo]-2,5-dichloro-, monolithium salt	Exposure
53169-23-6	Cerium tin oxide ($CeSnO_4$)	Exposure
53320-86-8	Silicic acid, lithium magnesium sodium salt	Exposure
53422-16-5	Octadecanoic acid, 12-hydroxy-, methyl ester, lithium salt	Exposure
53523-90-3	Benzoic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[6-hydroxy-5-methyl-, tetralithium salt	Exposure
55965-84-9	3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone	Exposure
56968-08-2	Glycine, N-[(2-hydroxy-5-nonylphenyl)methyl]-N-methyl-, monosodium salt	Exposure
57583-54-7	Phosphoric acid, 1,3-phenylene tetraphenyl ester	Exposure
58478-76-5	Octadecanoic acid, 12-hydroxy-, calcium lithium salt	Exposure
61788-45-2	Amines, hydrogenated tallow alkyl	Exposure
61788-56-5	Naphthenic acids, lithium salts	Exposure
61790-20-3	Naphthenic acids, rare earth salts	Exposure
61790-33-8	Amines, tallow alkyl	Exposure
62638-00-0	Cyclohexanebutanoic acid, lithium salt	Exposure
63182-07-0	Benzenesulfonic acid, ethenyl-, lithium salt, polymer with diethenylbenzene	Exposure
64601-11-2	Hexanedioic acid, monomethyl ester, lithium salt	Exposure
64742-70-7	Paraffin oils (petroleum), catalytic dewaxed heavy	Exposure
64742-71-8	Paraffin oils (petroleum), catalytic dewaxed light	Exposure
64754-95-6	Castor oil, hydrogenated, lithium salt	Exposure
64755-02-8	Fatty acids, tallow, lithium salts	Exposure

CAS RN[a]	Substance name	Recommended data gathering
65072-36-8	6-Benzothiazolesulfonic acid, 2-amino-, monolithium salt	Exposure
65150-80-3	C.I. Direct Yellow 11, lithium salt	Exposure
65232-89-5	Vanadium hydroxide oxide phosphate	Exposure
65530-69-0	Poly(difluoromethylene), α-[2-[(2-carboxyethyl)thio]ethyl]-ω-fluoro-, lithium salt	Exposure
66071-82-7	Fatty acids, tallow, hydrogenated, lithium salts	Exposure
66104-72-1	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[(4-hydroxyphenyl)azo]-, dilithium disodium salt	Exposure
67762-41-8	Alcohols, C10-16	Exposure
67923-89-1	2,7-Naphthalenedisulfonic acid, 5-amino-4-hydroxy-3-[[4'-[(1-hydroxy-4-sulfo-2-naphthalenyl)azo]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]azo]-, trilithium salt	Exposure
68141-24-2	Cyclohexanol, 3-(5,5-dimethyl-6-methylenebicyclo[2.2.1]hept-2-yl)-	Exposure
68187-15-5	C.I. Pigment Yellow 159	Exposure
68412-21-5	Neodecanoic acid, rare earth salts	Exposure
68476-89-1	Rare earth metals, silicides	Exposure
68514-63-6	Naphthenic acids, cerium(4++) salts	Exposure
68516-14-3	Rutile, neodymium	Exposure
68584-06-5	Benzene, diethenyl-, polymer with ethenylbenzene and ethenylethylbenzene, sulfonated, lithium salts	Exposure
68585-82-0	Yttrium oxide (Y_2O_3), europium-doped	Exposure
68609-21-2	Ethene, homopolymer, oxidized, lithium salt	Exposure
68611-42-7	C.I. Pigment Yellow 162	Exposure
68611-43-8	C.I. Pigment Yellow 161	Exposure
68649-48-9	Paraffin waxes and Hydrocarbon waxes, oxidized, lithium salts	Exposure
68783-36-8	Fatty acids, C16-22, lithium salts	Exposure
68783-37-9	Fatty acids, C16-18, lithium salts	Exposure
68784-83-8	Yttrium oxide sulfide (Y_2O_2S), europium-doped	Exposure
68815-49-6	Lithium, 12-hydroxyoctadecanoate sebacate complexes	Exposure
68909-13-7	Bastnaesite, calcined conc.	Exposure
70248-09-8	C.I. Pigment Brown 37	Exposure
71550-22-6	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-, tetralithium salt	Exposure
72927-96-9	2-Anthracenesulfonic acid, 1-amino-9,10-dihydro-9,10-dioxo-4-[(2,4,6-trimethylphenyl)amino]-, monolithium salt	Exposure
75522-97-3	Adenosine 5'-(hexahydrogen pentaphosphate), 5'<<FAR5'-ester with adenosine, trilithium salt	Exposure
75659-72-2	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-, monolithium trisodium salt	Exposure
75659-73-3	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-, dilithium disodium salt	Exposure

CAS RN[a]	Substance name	Recommended data gathering
75673-18-6	2,7-Naphthalenedisulfonic acid, 5-amino-4-hydroxy-3-[[4'-[(1-hydroxy-4-sulfo-2-naphthalenyl)azo]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]azo]-, monolithium disodium salt	Exposure
75673-19-7	2,7-Naphthalenedisulfonic acid, 5-amino-4-hydroxy-3-[[4'-[(1-hydroxy-4-sulfo-2-naphthalenyl)azo]-3,3'-dimethoxy[1,1'-biphenyl]-4-yl]azo]-, dilithium monosodium salt	Exposure
75673-34-6	1-Naphthalenesulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[4-hydroxy-, dilithium salt	Exposure
75673-35-7	1-Naphthalenesulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[4-hydroxy-, monolithium monosodium salt	Exposure
75752-17-9	2,7-Naphthalenedisulfonic acid, 3,3'-[(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-, trilithium monosodium salt	Exposure
80146-13-0	Copper, [29H,31H-phthalocyaninato(2-)-N^{29},N^{30},N^{31},N^{32}]-, aminosulfonyl sulfo derivs., ammonium lithium sodium salts	Exposure
83221-38-9	Benzenesulfonamide, 4-[[4-[[4-(2-hydroxybutoxy)-3-methylphenyl]azo]phenyl]amino]-3-nitro-N-(phenylsulfonyl)-, monolithium salt	Exposure
83221-68-5	2-Naphthalenesulfonic acid, 6-[(2,4-diaminophenyl)azo]-3-[[4-[[4-[[7-[(2,4-diaminophenyl)azo]-1-hydroxy-3-sulfo-2-naphthalenyl]azo]phenyl]amino]-3-sulfophenyl]azo]-4-hydroxy-, trilithium salt	Exposure
83221-69-6	2-Naphthalenesulfonic acid, 6-[(2,4-diaminophenyl)azo]-3-[[4-[[4-[[7-[(2,4-diaminophenyl)azo]-1-hydroxy-3-sulfo-2-naphthalenyl]azo]phenyl]amino]-3-sulfophenyl]azo]-4-hydroxy-, lithium sodium salt	Exposure
83221-72-1	2,7-Naphthalenedisulfonic acid, 4-amino-3,6-bis[[4-[(2,4-diaminophenyl)azo]phenyl]azo]-5-hydroxy-, lithium sodium salt	Exposure
83249-27-8	Chromate(3-), bis[3-hydroxy-4-[(2-hydroxy-1-naphthalenyl)azo]-7-nitro-1-naphthalenesulfonato(3-)]-, trilithium	Exposure
83249-66-5	Chromate(1-), bis[3-[[[5-[(2-chloro-4-nitrophenyl)azo]-2-hydroxyphenyl]methylene]amino]-4-hydroxybenzenesulfonamidato(2-)]-, lithium	Exposure
83399-85-3	1,4-Benzenedisulfonic acid, 2-[[4-[[4-[[(2,3-dichloro-6-quinoxalinyl)carbonyl]amino]-5-sulfo-1-naphthalenyl]azo]-7-sulfo-1-naphthalenyl]azo]-, lithium sodium salt	Exposure
83400-10-6	1,5-Naphthalenedisulfonic acid, 2-[[8-[[(2,3-dichloro-6-quinoxalinyl)carbonyl]amino]-1-hydroxy-3,6-disulfo-2-naphthalenyl]azo]-, lithium sodium salt	Exposure
83400-11-7	1,7-Naphthalenedisulfonic acid, 4-(benzoylamino)-6-[[5-[[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]methyl]-1-sulfo-2-naphthalenyl]azo]-5-hydroxy-, lithium sodium salt	Exposure
83400-12-8	2,7-Naphthalenedisulfonic acid, 5-(benzoylamino)-3-[[5-[[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]methyl]-1-sulfo-2-naphthalenyl]azo]-4-hydroxy-, lithium sodium salt	Exposure
83732-89-2	Chromate(1-), bis[4-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-3-hydroxy-N,N-dimethylbenzenesulfonamidato(2-)]-, lithium	Exposure

CAS RN[a]	Substance name	Recommended data gathering
83783-94-2	2,7-Naphthalenedisulfonic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[5-amino-4-hydroxy-, lithium sodium salt, compd. with 2,2'-(methylimino)bis[ethanol]	Exposure
83783-95-3	2-Naphthalenesulfonic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[6-amino-4-hydroxy-, lithium sodium salt, compd. with 2,2'-(methylimino)bis[ethanol]	Exposure
83783-96-4	2,7-Naphthalenedisulfonic acid, 5-amino-3-[[4-[2-[4-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-2-sulfophenyl]ethenyl]-3-sulfophenyl]azo]-4-hydroxy-, lithium sodium salt, compd. with 2,2'-(methylimino)bis[ethanol]	Exposure
83783-99-7	Benzoic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[6-hydroxy-5-methyl-, lithium sodium salt, compd. with 2,2'-(methylimino)bis[ethanol]	Exposure
83804-08-4	Cobaltate(1-), bis[4-hydroxy-3-[(2-hydroxy-1-naphthalenyl)azo]-N-methylbenzenesulfonamidato(2-)]-, lithium	Exposure
83804-10-8	Chromate(1-), bis[4-[(2-chloro-4-nitrophenyl)azo]-2-[[(2-hydroxy-5-nitrophenyl)imino]methyl]phenolato(2-)]-, lithium	Exposure
83804-11-9	Chromate(1-), bis[4-hydroxy-3-[(2-hydroxy-1-naphthalenyl)azo]benzenesulfonamidato(2-)]-, lithium	Exposure
83804-12-0	Chromate(1-), [4-hydroxy-3-[(2-hydroxy-1-naphthalenyl)azo]benzenesulfonamidato(2-)][N-[7-hydroxy-8-[(2-hydroxy-5-nitrophenyl)azo]-1-naphthalenyl]acetamidato(2-)]-, lithium	Exposure
83804-13-1	Chromate(1-), bis[N-[7-hydroxy-8-[(2-hydroxy-5-nitrophenyl)azo]-1-naphthalenyl]acetamidato(2-)]-, lithium	Exposure
84559-92-2	2,7-Naphthalenedisulfonic acid, 3,3'-[azoxybis[(2-methoxy-4,1-phenylene)azo]]bis[4,5-dihydroxy-, tetralithium salt	Exposure
85136-25-0	2,7-Naphthalenedisulfonic acid, 3,3'-[azoxybis[(2-methoxy-4,1-phenylene)azo]]bis[4,5-dihydroxy-, lithium sodium salt	Exposure
85480-61-1	Chromate(2-), [5-chloro-2-hydroxy-3-[(2-hydroxy-1-naphthalenyl)azo]benzenesulfonato(3-)][4-[(2-chloro-4-nitrophenyl)azo]-2-[[(2-hydroxy-5-nitrophenyl)imino]methyl]phenolato(2-)]-, lithium sodium	Exposure
85480-62-2	Chromate(2-), [1-[(5-chloro-2-hydroxyphenyl)azo]-2-naphthalenolato(2-)][3-hydroxy-4-[(2-hydroxy-1-naphthalenyl)azo]-1-naphthalenesulfonato(3-)]-, lithium sodium	Exposure
85480-63-3	Chromate(2-), [4-[(2-chloro-4-nitrophenyl)azo]-2-[[(2-hydroxy-5-nitrophenyl)imino]methyl]phenolato(2-)][2-hydroxy-3-[(2-hydroxy-1-naphthalenyl)azo]-5-nitrobenzenesulfonato(3-)]-, lithium sodium	Exposure
85480-64-4	Chromate(2-), [2,4-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-5-methyl-2-phenyl-3H-pyrazol-3-onato(2-)][3-hydroxy-4-[(2-hydroxy-1-naphthalenyl)azo]-7-nitro-1-naphthalenesulfonato(3-)]-, lithium sodium	Exposure
85480-69-9	Cuprate(4-), [7-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-4-hydroxy-3-[(2-hydroxy-4,7-disulfo-1-naphthalenyl)azo]-1,5-naphthalenedisulfonato(6-)]-, lithium potassium sodium	Exposure
85828-74-6	Chromate(2-), [4-[4,5-dihydro-4-[(2-hydroxy-5-nitrophenyl)azo]-3-methyl-5-oxo-1H-pyrazol-1-yl]benzenesulfonato(3-)][1-[[2-hydroxy-5-[(2-methoxyphenyl)azo]phenyl]azo]-2-naphthalenolato(2-)]-, lithium sodium	Exposure

CAS RN[a]	Substance name	Recommended data gathering
85828-75-7	Chromate(2-), [3-hydroxy-4-[(2-hydroxy-1-naphthalenyl)azo]-7-nitro-1-naphthalenesulfonato(3-)][N-[7-hydroxy-8-[(2-hydroxy-5-nitrophenyl)azo]-1-naphthalenyl]acetamidato(2-)]-, lithium sodium	Exposure
85828-76-8	Chromate(2-), [3-hydroxy-4-[(2-hydroxy-1-naphthalenyl)azo]-7-nitro-1-naphthalenesulfonato(3-)][1-[(2-hydroxy-5-nitrophenyl)azo]-2-naphthalenolato(2-)]-, lithium sodium	Exposure
85828-86-0	Chromate(2-), [5-chloro-2-hydroxy-3-[(5-hydroxynaphth[2,1-d]-1,3-oxathiol-4-yl)azo]benzenesulfonic acid S,S-dioxidato(3-)][4-[(2,5-dichlorophenyl)azo]-2-[[(2-hydroxy-5-nitrophenyl)imino]methyl]phenolato(2-)]-, lithium sodium	Exposure
85865-79-8	Chromate(2-), [2-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]benzoato(2)][2-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-5-sulfobenzoato(3-)]-, lithium sodium	Exposure
89415-87-2	2,4-Imidazolidinedione, 1,3-dichloro-5-ethyl-5-methylimidazolidine-2,4-dione	Exposure
90294-38-5	Chromate(2-), [3-[[[5-[(2-chloro-4-nitrophenyl)azo]-2-hydroxyphenyl]methylene]amino]-4-hydroxybenzenesulfonamidato(2-)][2-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-5-sulfobenzoato(3-)]-, lithium sodium	Exposure
90294-48-7	Chromate(3-), bis[2-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1H-pyrazol-4-yl)azo]-5-sulfobenzoato(3-)]-, lithium sodium	Exposure
90341-63-2	Cuprate(4-), [7-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-3-[(2,8-dihydroxy-4,6-disulfo-1-naphthalenyl)azo]-4-hydroxy-1,5-naphthalenedisulfonato(6-)]-, lithium sodium	Exposure
90341-64-3	Cuprate(4-), [7-[(5-chloro-2-fluoro-6-methyl-4-pyrimidinyl)amino]-4-hydroxy-3-[(2-hydroxy-4,6-disulfo-1-naphthalenyl)azo]-1,5-naphthalenedisulfonato(6-)]-, lithium potassium sodium	Exposure
90341-75-6	Cuprate(8-), [μ-[[3,3'-(carbonyldiimino)bis[7-[(2,8-dihydroxy-3,6-disulfo-1-naphthalenyl)azo]-8-hydroxy-1,5-naphthalenedisulfonato]](12-)]]di-, lithium sodium	Exposure
91081-19-5	Resin acids and Rosin acids, cerium(3++) salts	Exposure
91273-04-0	1H-1,2,4-Triazole-1-methanamine, N,N-bis(2-ethylhexyl)-	Exposure
94317-64-3	Phosphorothioic triamide, butyl-	Exposure
96792-67-5	Ethanone, 1-(hexahydrodimethyl-1H-benzindenyl)-	Exposure
102082-94-0	2,7-Naphthalenedisulfonic acid, 4-amino-6-[[4-[[[4-[(2,4-diaminophenyl)azo]phenyl]amino]sulfonyl]phenyl]azo]-5-hydroxy-3-[(4-nitrophenyl)azo]-, lithium salt	Exposure
106028-58-4	2,7-Naphthalenedisulfonic acid, 6-amino-4-hydroxy-3-[[7-sulfo-4-[(4-sulfophenyl)azo]-1-naphtalenyl]azo]-, tetralithium salt	Exposure
106726-11-8	Neodecanoic acid, neodynium(3+) salt	Exposure
106990-43-6	1,3,5-Triazine-2,4,6-triamine, N,N'''-[1,2-ethanediylbis[[[4,6-bis[butyl(1,2,2,6,6-pentamethyl-4-piperidinyl)amino]-1,3,5-triazin-2-yl]imino]-3,1-propenediyl]]bis[N',N''-dibutyl-N',N''-bis(1,2,2,6,6-pentamethyl-4-piperidinyl)-	Exposure

CAS RN[a]	Substance name	Recommended data gathering
108624-00-6	2,7-Naphthalenedisulfonic acid, 4-amino-6-[[5-[(5-chloro-2,6-difluoro-4-pyrimidinyl)amino]-2-sulfophenyl]azo]-5-hydroxy-3-[[4-[[2-(sulfooxy)ethyl]sulfonyl]phenyl]azo]-, lithium sodium salt	Exposure
110152-63-1	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[(4-hydroxyphenyl)azo]-, lithium sodium salt	Exposure
120962-01-8	Lubricating greases, contg. glycerol-12-hydroxyoctadecanoic acid-lithium hydroxide reaction products	Exposure
125302-03-6	2-Propenoic acid, 2-methyl-, lithium salt, polymer with 1-(1,1-dimethylethyl)-4-ethenylbenzene	Exposure
125328-83-8	2H-1-Benzopyran-2-one, 4-methyl-7-(phosphonooxy)-, dilithium salt	Exposure
125328-86-1	2-Anthracenesulfonic acid, 1-amino-4-[[4-(1,1-dimethylethyl)phenyl]amino]-9,10-dihydro-9,10-dioxo-, monolithium salt	Exposure
125352-04-7	Cuprate(3-), [μ-[4-[[3,3'-dihydroxy-4'-[(2-hydroxy-6-sulfo-1-naphthalenyl)azo][1,1'-biphenyl]-4-yl]azo]-3-hydroxy-2,7-naphthalenedisulfonato(7-)]]di-, ammonium lithium sodium, compds. with diethanolamine	Exposure
125643-61-0	Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl)-4-hydroxy-, C7_9-branched alkyl esters	Exposure
126637-70-5	Cuprate(4-), [μ-[[3,3'-[(3,3'-dihydroxy[1,1'-biphenyl]-4,4'-diyl)bis(azo)]bis[5-amino-4-hydroxy-2,7-naphthalenedisulfonato]](8-)]]di-, dilithium disodium	Exposure
126990-35-0	Cyclopentane, 1,1'-(dimethoxysilylene)bis-	Exposure
127519-17-9	Benzenepropanoic acid, 3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxy-, C7-9-branched and linear alkyl esters	Exposure
129811-21-8	Rare earth metals, 2-ethylhexanoate naphthenate complexes	Exposure
136210-30-5	Aspartic acid N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, tetraethyl ester	Exposure
136210-32-7	DL-Aspartic acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, tetraethyl ester	Exposure
163702-01-0	Benzene, (1-methylethenyl)-, homopolymer, ar-(2-hydroxy-2-methyl-1-oxopropyl) derivs.	Exposure
168253-59-6	Aspartic acid, N,N'-(2-methyl-1,5-pentanediyl)bis-, tetraethyl ester	Exposure
192268-65-8	Phosphorothioic acid, O,O,O-triphenyl esters, tert-Bu derivs.	Exposure
474510-57-1	1-Propanone, 1,1'-(methylene-di-4,1-phenylene)bis[2-hydroxy-2-methyl-	Exposure

[a]CAS RN: Chemical Abstracts Service Registry Number.

Appendix E. Substances identified for monitoring of international activity

CAS RN[a]	Substance name
50-00-0	Formaldehyde
50-03-3	Pregn-4-ene-3,20-dione, 21-(acetyloxy)-11,17-dihydroxy-, (11β)-
52-51-7	1,3-Propanediol, 2-bromo-2-nitro-
75-15-0	Carbon disulfide
75-78-5	Silane, dichlorodimethyl-
78-87-5	Propane, 1,2-dichloro-
79-00-5	Ethane, 1,1,2-trichloro-
84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester
85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester
95-50-1	Benzene, 1,2-dichloro-
96-33-3	2-Propenoic acid, methyl ester
96-49-1	1,3-Dioxolan-2-one
98-01-1	2-Furancarboxaldehyde
99-62-7	Benzene, 1,3-bis(1-methylethyl)-
100-18-5	Benzene, 1,4-bis(1-methylethyl)-
102-06-7	Guanidine, N,N'-diphenyl-
103-23-1	Hexanedioic acid, bis(2-ethylhexyl) ester
104-93-8	Benzene, 1-methoxy-4-methyl-
105-59-9	Ethanol, 2,2'-(methylimino)bis-
106-46-7	Benzene, 1,4-dichloro-
108-05-4	Acetic acid ethenyl ester
108-87-2	Cyclohexane, methyl-
108-95-2	Phenol
115-96-8	Ethanol, 2-chloro-, phosphate (3:1)
116-25-6	2,4-Imidazolidinedione, 1-(hydroxymethyl)-5,5-dimethyl-
117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester
120-93-4	2-Imidazolidinone
123-51-3	1-Butanol, 3-methyl-
126-11-4	1,3-Propanediol, 2-(hydroxymethyl)-2-nitro-
140-95-4	Urea, N,N'-bis(hydroxymethyl)-
149-44-0	Methanesulfinic acid, hydroxy-, monosodium salt
461-72-3	2,4-Imidazolidinedione
597-82-0	Phosphorothioic acid, O,O,O-triphenyl ester
624-92-0	Disulfide, dimethyl
754-12-1	1-Propene, 2,3,3,3-tetrafluoro
868-77-9	2-Propenoic acid, 2-methyl-, 2-hydroxyethyl ester
994-05-8	Butane, 2-methoxy-2-methyl-
999-97-3	Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-

CAS RN[a]	Substance name
1308-38-9	Chromium oxide (Cr_2O_3)
1333-86-4	Carbon black
1506-02-1	Ethanone, 1-(5,6,7,8-tetrahydro-3,5,5,6,8,8-hexamethyl-2-naphthalenyl)-
1634-04-4	Propane, 2-methoxy-2-methyl-
2162-74-5	Benzenamine, N,N'-methanetetraylbis[2,6-bis(1-methylethyl)-
2386-87-0	7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 7-oxabicyclo[4.1.0]hept-3-ylmethyl ester
2832-19-1	Acetamide, 2-chloro-N-(hydroxymethyl)-
3081-01-4	1,4-Benzenediamine, N-(1,4-dimethylpentyl)-N'-phenyl-
3107-18-4	Cyclohexanesulfonic acid, undecafluoro-, potassium salt
3302-10-1	Hexanoic acid, 3,5,5-trimethyl-
3468-63-1	2-Naphthalenol, 1-[(2,4-dinitrophenyl)azo]-
3710-84-7	Ethanamine, N-ethyl-N-hydroxy-
3720-97-6	2-Imidazolidinone, 4,5-dihydroxy-
3891-98-3	Dodecane, 2,6,10-trimethyl-
4719-04-4	1,3,5-Triazine-1,3,5(2H,4H,6H)-triethanol
5026-74-4	Oxiranemethanamine, N-[4-(oxiranylmethoxy)phenyl]-N-(oxiranylmethyl)-
5395-50-6	Imidazo[4,5-d]imidazole-2,5(1H,3H)-dione, tetrahydro-1,3,4,6-tetrakis(hydroxymethyl)-
6440-58-0	2,4-Imidazolidinedione, 1,3-bis(hydroxymethyl)-5,5-dimethyl-
7440-36-0	Antimony
7631-95-0	Molybdate (MoO_4^{2-}), disodium, (T-4)-
7722-64-7	Permanganic acid ($HMnO_4$), potassium salt (1:1)
7758-19-2	Chlorous acid, sodium salt
9003-36-5	Formaldehyde, polymer with (chloromethyl)oxirane and phenol
10028-22-5	Sulfuric acid, iron(3++) salt (3:2)
10254-57-6	Carbamodithioic acid, dibutyl-, methylene ester
14548-60-8	Methanol, (phenylmethoxy)-
16228-00-5	2,4-Imidazolidinedione, 3-(hydroxymethyl)-5,5-dimethyl-
17928-28-8	Trisiloxane, 1,1,1,3,5,5,5-heptamethyl-3-[(trimethylsilyl)oxy]-
18127-01-0	Benzenepropanal, 4-(1,1-dimethylethyl)-
18172-67-3	Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1S)-
21145-77-7	Ethanone, 1-(5,6,7,8-tetrahydro-3,5,5,6,8,8-hexamethyl-2-naphthalenyl)-
25321-09-9	Benzene, bis(1-methylethyl)-
25584-83-2	2-Propenoic acid, monoester with 1,2-propanediol
27107-89-7	8-Oxa-3,5-dithia-4-stannatetradecanoic acid, 10-ethyl-4-[[2-[(2-ethylhexyl)oxy]-2-oxoethyl]thio]-4-octyl-7-oxo-, 2-ethylhexyl ester
27813-02-1	2-Propenoic acid, 2-methyl-, monoester with 1,2-propanediol
28299-41-4	Benzene, 1,1'-oxybis[methyl-
28472-97-1	Nonanedioic acid, diisodecyl ester
29420-49-3	1-Butanesulfonic acid, 1,1,2,2,3,3,4,4,4-nonafluoro-, potassium salt
30007-47-7	1,3-Dioxane, 5-bromo-5-nitro-
31394-54-4	Isoheptane

CAS RN[a]	Substance name
32388-55-9	Ethanone, 1-(2,3,4,7,8,8a-hexahydro-3,6,8,8-tetramethyl-1H-3a,7-methanoazulen-5-yl)-, [3R-(3α,3aβ,7β,8aα)]-
32492-61-8	Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-hydroxy-
34375-28-5	Ethanol, 2-(hydroxymethylamino)-
36483-57-5	1-Propanol, 2,2-dimethyl-, tribromo deriv.
36861-47-9	Bicyclo[2.2.1]heptan-2-one, 1,7,7-trimethyl-3-[(4-methylphenyl)methylene]-
39236-46-9	Urea, N,N''-methylenebis[N'-[3-(hydroxymethyl)-2,5-dioxo-4-imidazolidinyl]-
51200-87-4	Oxazolidine, 4,4-dimethyl-
53306-54-0	1,2-Benzenedicarboxylic acid, bis(2-propylheptyl) ester
53988-10-6	2H-Benzimidazole-2-thione, 1,3-dihydro-4(or 5)-methyl-
57677-95-9	1-Octanol, 3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluoro-, 1,1'-(hydrogen phosphate)
63500-71-0	2H-Pyran-4-ol, tetrahydro-4-methyl-2-(2-methylpropyl)-
66204-44-2	Oxazolidine, 3,3'-methylenebis[5-methyl-
67584-42-3	Cyclohexanesulfonic acid, decafluoro(pentafluoroethyl)-, potassium salt
68479-98-1	Benzenediamine, ar,ar-diethyl-ar-methyl-
68609-97-2	Oxirane, mono[(C12-14-alkyloxy)methyl] derivs.
68938-03-4	Octene, hydroformylation products, low-boiling
70356-09-1	1,3-Propanedione, 1-[4-(1,1-dimethylethyl)phenyl]-3-(4-methoxyphenyl)-
71617-10-2	2-Propenoic acid, 3-(4-methoxyphenyl)-, 3-methylbutyl ester
75980-60-8	Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl)-
78491-02-8	Urea, N-[1,3-bis(hydroxymethyl)-2,5-dioxo-4-imidazolidinyl]-N,N'-bis(hydroxymethyl)-
101357-15-7	Benzenamine, reaction products with aniline hydrochloride and nitrobenzene
118832-72-7	Acetic acid, [[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]thio]-, C10-14-isoalkyl esters
NA[b]	Crumb Rubber (Substances in recycled crumb rubber used as infill material in synthetic turf)

[a]CAS RN: Chemical Abstracts Service Registry Number.

[b]Not applicable.