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GOVERNMENT NOTICES

DEPARTMENT OF THE ENVIRONMENT

DEPARTMENT OF HEALTH

CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999

Publication of final decision after screening assessment of six azo metal complexes and other azo substances specified on the Domestic Substances List (subsection 77(6) of the Canadian Environmental Protection Act, 1999)

Whereas the six azo metal complexes and the other azo substances (“the substances”) identified in the annex below are substances on the *Domestic Substances List* identified under subsection 73(1) of the *Canadian Environmental Protection Act, 1999*;

Whereas a summary of the Screening Assessment conducted on the substances pursuant to section 74 of the Act is annexed hereby;

And whereas it is concluded that these substances do not meet any of the criteria set out in section 64 of the Act,

Notice therefore is hereby given that the Minister of the Environment and the Minister of Health propose to take no further action under section 77 of the Act on the substances at this time.

LEONA AGLUKKAQ
Minister of the Environment

RONA AMBROSE
Minister of Health

ANNEX

Summary of the Screening Assessment of Azo Metal Complexes and Other Substances

Pursuant to section 74 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999), the Minister of the Environment and the Minister of Health have conducted a screening assessment of four azo metal complexes and two other azo substances. These six substances constitute two subgroups of the Aromatic Azo and Benzidine-based Substance Grouping being assessed as part of the Substance Groupings Initiative of the Government of Canada’s Chemicals Management Plan based on structural similarity and applications. Substances in this grouping were identified as priorities for assessment as they met the categorization criteria under subsection 73(1) of CEPA 1999 and/or were considered as a priority based on other human health concerns.

These substances are considered together in this assessment, as they constitute the azo metal complexes subgroup and other individual azo substances that do not belong in any of the aromatic azo and benzidine-based substance subgroups. The Chemical Abstracts Service Registry Number (CAS RN) ([see footnote 1](#)) and *Domestic Substances List* (DSL) name of the four azo metal complexes and two other azo substances are presented in the following table.

Identity of four azo metal complexes and two other azo substances in the Aromatic Azo and Benzidine-based Substance Grouping

CAS RN	<i>Domestic Substances List name</i>
6708-61-8 (see reference a)	1-Triazene, 1-(4-nitro-1-naphthalenyl)-3-[4-(phenylazo)phenyl]-
63224-47-5 (see reference b)	Benzenediazonium, 4-[(2,6-dichloro-4-nitrophenyl)azo]-2,5-dimethoxy-, (T-4)-tetrachlorozincate(2-) (2:1)
72391-06-1 (see reference c)	Spiro[isobenzofuran-1(3 <i>H</i>),9'(8' <i>aH</i>)-xanthylium], 3',6'-bis(diethylamino)-3-oxo-, chloride, compd. with [4-[(4,5-dihydro-3-methyl-5-oxo-1-phenyl-1 <i>H</i> -pyrazol-4-yl)azo]-3-hydroxy-1-naphthalenesulfonato(3-)]chromium (1:1)
83221-38-9 (see reference d)	Benzenesulfonamide, 4-[[4-[[4-(2-hydroxybutoxy)-3-methylphenyl]azo]phenyl]amino]-3-nitro- <i>N</i> -(phenylsulfonyl)-, monolithium salt
85029-57-8 (see reference e), (see reference f)	Amines, C ₁₀₋₁₄ -branched and linear alkyl, bis[2,4-dihydro-4-[(2-hydroxy-4-nitrophenyl)azo]-5-methyl-2-phenyl-3 <i>H</i> -pyrazol-3-onato(2-)]chromate(1-)
94276-35-4 (see reference g)	Xanthylium, 9-[2-(ethoxycarbonyl)phenyl]-3,6-bis(ethylamino)-2,7-dimethyl-, hydroxy[2-hydroxy-5-nitro-3-[[2-oxo-1-[(phenylamino)carbonyl]propyl]azo] benzenesulfonato(3-)]chromate(1-)

[Reference a](#)

Other azo substances.

[Reference b](#)

Azo metal complexes.

[Reference c](#)

Azo metal complexes.

[Reference d](#)

Other azo substances.

[Reference e](#)

Azo metal complexes.

[Reference f](#)

Substance of unknown or variable composition, complex reaction product or biological material (UVCB).

[Reference g](#)

Azo metal complexes.

All six substances in this Screening Assessment do not occur naturally in the environment. No manufacture of any substance above the 100 kg/year reporting threshold has been reported in response to any recent surveys under section 71 of CEPA 1999. One substance, CAS RN 85029-57-8, has been reported as having an import quantity above the 100 kg/year survey reporting threshold. No import or use in Canada has been identified for any of the remaining five substances (CAS RN 6708-61-8, CAS RN 63224-47-5, CAS RN 72391-06-1, CAS RN 83221-38-9 and CAS RN 94276-35-4).

An assessment approach based on rapid screening principles was applied to the five substances with no reported import or use in Canada to confirm that there are no sources of exposure in the environment or to the general population of Canada from these substances. The remainder of this screening assessment focuses on the one substance in commerce in Canada, CAS RN 85029-57-8.

Environment

As part of the rapid screening assessment approach for the five substances with no identified commercial activity in Canada, the generic aquatic exposure values were calculated to be below the predicted concentrations of concern for aquatic organisms. Furthermore, no information was identified by domestic or international initiatives to indicate these substances as possibly being of greater concern due to their ecological hazard properties or elevated potential for environmental release.

The substance bearing CAS RN 85029-57-8 has relatively low water solubility (0.002–0.5 mg/L) and is not expected to dissociate at environmentally relevant pH levels. Considering its physical and chemical properties,

when released to water, the substance bearing CAS RN 85029-57-8 is expected to remain in the water column for a period of time before ultimately partitioning via electrostatic interaction and sorption to suspended solids and ultimately sediments. When released to soil, it is expected to remain in that compartment.

Available experimental and modelled data regarding the abiotic and biotic degradation of the substance bearing CAS RN 85029-57-8 indicate that this substance is expected to persist in water, sediment and soil. In anaerobic environments (i.e. anoxic layers of sediments), there is the potential for this substance to degrade to aromatic amines as a result of cleavage of the azo bond under anaerobic or reducing conditions.

Based on limited data, the substance bearing CAS RN 85029-57-8 is expected to have a low bioaccumulation potential due to its low octanol–water partition coefficient and relatively high molecular weight. Read-across aquatic toxicity data suggest that the substance bearing CAS RN 85029-57-8 is not highly hazardous to aquatic organisms (median lethal concentrations predominantly between 3 and 10 mg/L). No data were available on toxicity to soil- and sediment-dwelling organisms.

The risk quotient analysis for the substance bearing CAS RN 85029-57-8 focused on exposure scenarios representing major potential environmental releases of the substance due to industrial activities. Predicted environmental concentrations (PECs) associated with releases of the substance during its use in industrial formulation activities were calculated for the aquatic environment. The PECs were not found to exceed the predicted no-effect concentrations (PNECs) for water. Due to a lack of data, no risk quotients were calculated for the soil or sediment compartments.

Considering all available lines of evidence presented in this Screening Assessment, there is a low risk of harm to organisms and the broader integrity of the environment from the four azo metal complexes and the two other azo substances evaluated in this assessment. It is concluded that these six substances do not meet the criteria under paragraph 64(a) or 64(b) of CEPA 1999, as they are not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity or that constitute or may constitute a danger to the environment on which life depends.

Human health

Exposure of the general population to the four azo metal complexes and the two other azo substances from environmental media is not expected due to limited commercial quantities in Canada; therefore, risk to human health from this source is not expected.

As part of the rapid screening assessment approach for the five substances with no identified commercial activity in Canada (CAS RN 6708-61-8, CAS RN 63224-47-5, CAS RN 72391-06-1, CAS RN 83221-38-9 and CAS RN 94276-35-4), no other sources of exposure of the general population of Canada were identified. Therefore, based on current information for exposure, risk to human health is not expected for these substances. Additionally, none of these substances has been classified by any national or international agency for hazard potential, and available information does not indicate that these substances have effects of concern based on potential carcinogenicity.

The substance bearing CAS RN 85029-57-8 was identified to be used in wood coatings and stains at concentrations of 2.5–10%. While dermal exposure to this substance is possible for the general population during wood coating and staining, exposure to this substance is expected to be limited for the general population of Canada. Therefore, risk to human health is considered to be low for this substance.

Based on the information presented in this Screening Assessment, it is concluded that the four azo metal complexes and the two other azo substances evaluated in this assessment do not meet the criteria under paragraph 64(c) of CEPA 1999 as they are not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health.

Overall conclusion

It is concluded that the four azo metal complexes and the two other azo substances evaluated in this assessment do not meet any of the criteria set out in section 64 of CEPA 1999.

DEPARTMENT OF THE ENVIRONMENT

DEPARTMENT OF HEALTH

CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999

Publication of final decision after screening assessment of 61 azo direct dyes and 8 azo reactive dyes specified on the Domestic Substances List (paragraphs 68(b) and (c) or subsection 77(6) of the Canadian Environmental Protection Act, 1999)

Whereas 60 of the 61 azo direct dyes and 7 of the 8 azo reactive dyes identified in the annex below are substances on the *Domestic Substances List* identified under subsection 73(1) of the *Canadian Environmental Protection Act, 1999*;

Whereas a summary of the Screening Assessment conducted on 1 azo direct dye and 1 azo reactive dye pursuant to paragraphs 68(b) and (c) of the Act and on 60 azo direct dyes and 7 azo reactive dyes pursuant to section 74 of the Act is annexed hereby;

And whereas it is concluded that these substances do not meet any of the criteria set out in section 64 of the Act,

Notice therefore is hereby given that the Minister of the Environment and the Minister of Health (the ministers) propose to take no further action on one azo direct dye and one azo reactive dye at this time.

Notice is furthermore given that the ministers propose to take no further action under section 77 of the Act on the remaining 60 azo direct dyes and 7 azo reactive dyes at this time.

LEONA AGLUKKAQ
Minister of the Environment

RONA AMBROSE
Minister of Health

ANNEX

Summary of the Screening Assessment of Azo Direct Dyes and Azo Reactive Dyes

Pursuant to section 68 or 74 of the *Canadian Environmental Protection Act, 1999* (CEPA 1999), the Minister of the Environment and the Minister of Health have conducted a screening assessment of 61 azo direct dyes and 8 azo reactive dyes. These 69 substances constitute two subgroups of the Aromatic Azo and Benzidine-based Substance Grouping being assessed as part of the Substance Groupings Initiative of the Government of Canada's Chemicals Management Plan based on structural similarity and applications. Substances in this grouping were identified as a priority for assessment as they met categorization criteria under subsection 73(1) of CEPA 1999 and/or were considered a priority based on other human health concerns.

The Chemical Abstracts Service Registry Number (CAS RN), ([see footnote 2](#)) *Domestic Substances List* (DSL) name and Colour Index (C.I.) generic name of the 69 substances are presented in the following tables, by subgroup.

Table 1: Identity of the 61 azo direct dyes in the Aromatic Azo and Benzidine-based Substance Grouping

CAS RN	<i>Domestic Substances List</i> name	Colour Index name
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1325-37-7(see reference h), (see reference i)	C.I. Direct Yellow 11	Direct Yellow 11
1325-54-8(see reference j)	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis-5-nitro-, disodium salt, reaction products with 4-[(4-aminophenyl)azo]benzenesulfonic acid, sodium salts	Direct Orange 39
2829-42-7	Benzoic acid, 3,3'-[carbonylbis(imino-4,1-phenyleneazo)]bis[6-hydroxy-, disodium salt	Direct Yellow 26
2870-32-8	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[(4-ethoxyphenyl)azo]-, disodium salt	Direct Yellow 12
3214-47-9	1,5-Naphthalenedisulfonic acid, 3,3'-[carbonylbis(imino(2-methyl-4,1-phenylene)azo)]bis-, tetrasodium salt	Direct Yellow 50
3626-36-6	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-(phenylazo)-, disodium salt	Direct Orange 26
3687-80-7	1-Naphthalenesulfonic acid, 4-[[1-hydroxy-6-[[[[5-hydroxy-6-[(2-methoxyphenyl)azo]-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-sulfo-2-naphthalenyl]azo]-, trisodium salt	Direct Red 26
4399-55-7	1,5-Naphthalenedisulfonic acid, 3-[[4-[[4-[(6-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-6-sulfo-1-naphthalenyl]azo]-1-naphthalenyl]azo]-, tetrasodium salt	Direct Blue 71
5001-72-9	2-Naphthalenesulfonic acid, 7,7'-iminobis[4-hydroxy-3-(phenylazo)-, disodium salt	Direct Red 31
5489-77-0	2-Naphthalenesulfonic acid, 3-[[4-[(2,4-dimethyl-6-sulfophenyl)azo]-2-methoxy-5-methylphenyl]azo]-4-hydroxy-7-(phenylamino)-, disodium salt	Direct Violet 51
6406-87-7	2-Naphthalenesulfonic acid, 5-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-8-[[4-(phenylazo)-7-sulfo-1-naphthalenyl]azo]-, trisodium salt	NA
6420-33-3	1,5-Naphthalenedisulfonic acid, 3,3'-[carbonylbis(imino(5-methoxy-2-methyl-4,1-phenylene)azo)]bis-, tetrasodium salt	Direct Yellow 34
6420-41-3	2-Naphthalenesulfonic acid, 4-hydroxy-7-[[[[5-hydroxy-6-(phenylazo)-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-[(6-sulfo-2-naphthalenyl)azo]-, trisodium salt	Direct Red 4
6420-43-5	2-Naphthalenesulfonic acid, 4-hydroxy-7-[[[[5-hydroxy-6-[(2-methylphenyl)azo]-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-[(2-methyl-4-sulfophenyl)azo]-, trisodium salt	Direct Red 62
6471-09-6	Benzoic acid, 5-[[4-[[4-[[4-[(4-amino-9,10-dihydro-9,10-dioxo-3-sulfo-1-anthracenyl)amino]-2-sulfophenyl]amino]-6-(phenylamino)-1,3,5-triazin-2-yl]amino]phenyl]azo]-2-hydroxy-, trisodium salt	Direct Green 28
6476-10-4	2-Naphthalenesulfonic acid, 8-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-5-[[4-(phenylazo)-6-sulfo-1-naphthalenyl]azo]-, trisodium salt	NA
10114-47-3	7-Benzothiazolesulfonic acid, 2,2'-(azodi-4,1-phenylene)bis[6-methyl-, disodium salt	Direct Yellow 28
10134-33-5	2-Naphthalenesulfonic acid, 8-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-5-[[4-(phenylazo)-7-sulfo-1-naphthalenyl]azo]-, trisodium salt	Direct Black 56
10482-42-5	2-Naphthalenesulfonic acid, 5-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-8-[[4-(phenylazo)-6-sulfo-1-naphthalenyl]azo]-, trisodium salt	NA
12217-64-0	1,3-Naphthalenedisulfonic acid, 7,7'-[carbonylbis(imino(5-methoxy-2-methyl-4,1-phenylene)azo)]bis-, tetrasodium salt	Direct Orange 72

28706-21-0	1,3-Naphthalenedisulfonic acid, 7,7'-[iminobis[carbonyl(2-methyl-4,1-phenylene)azo]]bis-, tetrasodium salt	NA
32829-81-5	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[[4-[(4-sulfophenyl)azo]phenyl]azo]-, tetrasodium salt	NA
38801-08-0	Benzoic acid, 4,4'-[carbonylbis[imino(1-hydroxy-3-sulfo-6,2-naphthalenediyl)azo]]bis-, compd. with 2,2',2'-nitrilotris[ethanol] (1:4)	NA
53523-90-3	Benzoic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[6-hydroxy-5-methyl-, tetralithium salt	NA
65150-80-3(see reference k)	C.I. Direct Yellow 11, lithium salt	Direct Yellow 11, lithium salt
71033-21-1(see reference l)	Benzothiazolesulfonic acid, 2,2'-(azodi-4,1-phenylene)bis[6-methyl-, disodium salt	NA
71767-19-6	2-Naphthalenesulfonic acid, 5-[[6-amino-1-hydroxy-3-sulfo-5-[(3-sulfophenyl)azo]-2-naphthalenyl]azo]-6-methoxy-8-[[7-sulfo-4-[(3-sulfophenyl)azo]-1-naphthalenyl]azo]-, pentasodium salt	NA
71873-49-9	Benzoic acid, 4,4'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)- <i>ONN</i> -azoxy-4,1-phenyleneazo]]bis-, tetrasodium salt	NA
72139-21-0	Benzoic acid, 3,3'-[(1,4-dioxo-2-butene-1,4-diyl)bis(imino-4,1-phenyleneazo)]bis[6-hydroxy-, disodium salt	NA
72152-50-2	Benzoic acid, 2-[[6-[[4-[[6-(benzoylamino)-1-hydroxy-3-sulfo-2-naphthalenyl]azo]-3-methylbenzoyl]amino]-1-hydroxy-3-sulfo-2-naphthalenyl]azo]-, trisodium salt	NA
72245-49-9	Benzoic acid, 4-[[1-hydroxy-6-[[[[5-hydroxy-6-[(2-methyl-4-sulfophenyl)azo]-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-sulfo-2-naphthalenyl]azo]-, sodium salt	NA
72245-56-8	2,7-Naphthalenedisulfonic acid, 4-amino-3-[[4-[[[4-[(2,4-diaminophenyl)azo]phenyl]amino]carbonyl]phenyl]azo]-5-hydroxy-6-(phenylazo)-, sodium salt	NA
72749-87-2	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-[(2-methylphenyl)azo]-, disodium salt	NA
72749-88-3	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-[(2-methoxyphenyl)azo]-, disodium salt	NA
72869-93-3	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-[(6-sulfo-2-naphthalenyl)azo]-, compd. with 2,2'-(methylimino)bis[ethanol] (1:4)	NA
75150-14-0	1,4-Benzenedisulfonic acid, 2-[[4-[[4-[[1-hydroxy-6-(phenylamino)-3-sulfo-2-naphthalenyl]azo]-1-naphthalenyl]azo]-6-sulfo-1-naphthalenyl]azo]-, ammonium sodium salt	NA
75768-93-3	2-Naphthalenesulfonic acid, 7-(benzoylamino)-4-hydroxy-3-[[4-[(4-sulfophenyl)azo]phenyl]azo]-, compd. with 2,2',2''-nitrilotris[ethanol] (1:2)	Direct Red 81, triethanolamine salt
83221-53-8	Benzoic acid, 5-[[4-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-1-naphthalenyl]azo]-2-hydroxy-, sodium salt	NA
83221-54-9	Benzoic acid, 3-[[4-[(7-amino-1-hydroxy-3-sulfo-2-naphthalenyl)azo]-1-naphthalenyl]azo]-2-hydroxy-, sodium salt	NA
83221-56-1	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-(phenylazo)-, sodium salt	NA

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	NA
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	NA
83221-72-1	2,7-Naphthalenedisulfonic acid, 4-amino-3,6-bis[[4-[(2,4-diaminophenyl)azo]phenyl]azo]-5-hydroxy-, lithium sodium salt	NA
83221-73-2	Benzoic acid, 4,4'-[carbonylbis[imino(1-hydroxy-3-sulfo-6,2-naphthalenediyl)azo]]bis-, sodium salt	NA
83221-74-3	Benzoic acid, 4-[[1-hydroxy-6-[[[5-hydroxy-6-(phenylazo)-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-sulfo-2-naphthalenyl]azo]-, sodium salt	NA
83232-28-4	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[3-[[4-(acetylamino)phenyl]azo]-4-hydroxy-, sodium salt	NA
83232-29-5	2-Naphthalenesulfonic acid, 3-[[4-(acetylamino)phenyl]azo]-4-hydroxy-7-[[[5-hydroxy-6-(phenylazo)-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-, sodium salt	NA
83232-30-8	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-[(2-methylphenyl)azo]-, sodium salt	NA
83232-31-9	2-Naphthalenesulfonic acid, 7,7'-(carbonyldiimino)bis[4-hydroxy-3-[(2-methyl-4-sulfophenyl)azo]-, sodium salt	NA
83232-32-0	2-Naphthalenesulfonic acid, 4-hydroxy-7-[[[5-hydroxy-6-[(2-methylphenyl)azo]-7-sulfo-2-naphthalenyl]amino]carbonyl]amino]-3-[(2-methyl-4-sulfophenyl)azo]-, sodium salt	NA
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]	NA
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]	NA
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]	NA
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]	NA
84878-16-0	2,7-Naphthalenedisulfonic acid, 4-amino-6-[[4-[[4-[(2,4-dihydroxyphenyl)azo]phenyl]thio]phenyl]azo]-5-hydroxy-3-[(4-nitrophenyl)azo]-, sodium salt	NA
84878-17-1	2,7-Naphthalenedisulfonic acid, 4-amino-6-[[4-[[[4-[(2,4-dihydroxyphenyl)azo]phenyl]amino]sulfonyl]phenyl]azo]-5-hydroxy-3-[(4-nitrophenyl)azo]-, potassium salt	NA
85169-18-2	Glycine, N-[4-[[2-[4-[[1-amino-8-hydroxy-7-(phenylazo)-3,6-disulfo-2-naphthalenyl]azo]phenyl]-1H-benzimidazol-5-yl]azo]3-hydroxyphenyl]-, compd. with 2,2'-iminobis[ethanol] (1:3)	NA
85269-31-4	Benzoic acid, 3,3'-[1,2-ethenediylbis[(3-sulfo-4,1-phenylene)azo]]bis[6-hydroxy-5-methyl-, potassium salt, compd. with 2,2',2''-nitrilotris[ethanol]	NA

93803-37-3	2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3-[[4-[5-[(4-hydroxyphenyl)azo]-1 <i>H</i> -benzimidazol-2-yl]phenyl]azo]-6-(phenylazo)-, disodium salt	NA
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	NA
110152-63-1	Benzenesulfonic acid, 2,2'-(1,2-ethenediyl)bis[5-[(4-hydroxyphenyl)azo]-, lithium sodium salt	NA

Abbreviation: NA = not available.

[Reference h](#)

This CAS RN is a UVCB (unknown or variable composition, complex reaction product, or biological material).

[Reference i](#)

This substance was not identified under subsection 73(1) of CEPA 1999 but was included in this assessment as it was considered a priority based on other human health concerns.

[Reference j](#)

This CAS RN is a UVCB (unknown or variable composition, complex reaction product, or biological material).

[Reference k](#)

This CAS RN is a UVCB (unknown or variable composition, complex reaction product, or biological material).

[Reference l](#)

This CAS RN is a UVCB (unknown or variable composition, complex reaction product, or biological material).

Table 2: Identity of the eight azo reactive dyes in the Aromatic Azo and Benzidine-based Substance Grouping

CAS RN	<i>Domestic Substance List name</i>	Colour Index name
17095-24-8(see reference m)	2,7-Naphthalenedisulfonic acid, 4-amino-5-hydroxy-3,6-bis[[4-[[2- (sulfooxy)ethyl]sulfonyl]phenyl]azo]-, tetrasodium salt	Reactive Black 5
59641-46-2	2-Naphthalenesulfonic acid, 7-[[4-chloro-6-[(3-sulfophenyl)amino]-1,3,5-triazin-2-yl]amino]-4-hydroxy-3-[(4-methoxy-2-sulfophenyl)azo]-	NA
83399-85-3	1,4-Benzenedisulfonic acid, 2-[[4-[[4-[(2,3-dichloro-6-quinoxalanyl)carbonyl]amino]-5-sulfo-1-naphthalenyl]azo]-7-sulfo-1- naphthalenyl]azo]-, lithium sodium salt	NA
83400-10-6	1,5-Naphthalenedisulfonic acid, 2-[[8-[[[(2,3-dichloro-6-quinoxalanyl) carbonyl]amino]- 1-hydroxy-3,6-disulfo-2-naphthalenyl]azo]-, lithium sodium salt	NA
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	Reactive Black 158
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	NA
85586-78-3	1,5-Naphthalenedisulfonic acid, 3-[[4-[[4-[(4-amino-6-chloro-1,3,5-triazin-2-yl)amino]-7-sulfo-1-naphthalenyl]azo]-7-sulfo-1-naphthalenyl]azo]-, potassium sodium salt	NA
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	Reactive Blue 225

Abbreviation: NA = not available.

[Reference m](#)

This substance was not identified under subsection 73(1) of CEPA 1999 but was included in this assessment as it was considered a priority based on other human health concerns.

Azo direct dyes and azo reactive dyes are not expected to occur naturally in the environment. No manufacture of any of these substances above the 100 kg/year reporting threshold has been reported in Canada in response to any recent surveys under section 71 of CEPA 1999. Seven substances (six azo direct dyes and one azo reactive dye) have been reported as having an import quantity above the 100 kg/year survey reporting threshold. Some of these substances were also among those identified as being used in products available to consumers in the Canadian marketplace. Azo direct dyes are generally used for the colouring of textiles, leather and paper. Azo reactive dyes are used primarily in the textiles industry for dyeing cellulosic fibres such as cotton and rayon.

Environment

All azo direct dyes and azo reactive dyes are soluble in water, with solubility generally well above 1 g/L. When considering potential releases to water, sediment and soil and the physical and chemical properties of these substances, it is expected that the azo direct and azo reactive dyes may remain in the water column for relatively long periods of time due to their hydrophilicity, but will ultimately partition via electrostatic interactions to suspended solids, sediments or soil particles. Available experimental and modelled data regarding the abiotic and biotic degradation of the azo direct and azo reactive dyes indicate that these substances may persist in water, sediment and soil. In anaerobic environments (e.g. anoxic layers of sediments), there is the potential for these substances to degrade to aromatic amines as a result of cleavage of the azo bond under anaerobic or reducing conditions.

Although there are limited experimental data available, information on the log octanol-water partition coefficients and fish bioconcentration factors indicates that these substances are not likely to bioconcentrate or bioaccumulate in aquatic organisms.

There is a wide range of acute toxicity data for azo direct dyes (median lethal concentrations [LC₅₀] ranging from 75 to ≥1 000 mg/L). The lowest LC₅₀ of 75 mg/L was observed in rainbow trout at 48 hours. Azo reactive dyes were found to elicit effects in aquatic organisms at low concentrations. The aquatic invertebrate *Daphnia magna* was found to be more sensitive than the various fish species tested. The differences were even more pronounced when the length of exposure (up to 21 days) was increased. Daphnid reproduction was found to be the most sensitive endpoint, with a 21-day no-observed-effect concentration (NOEC) and lowest-observed-effect concentration (LOEC) of 1.25 and 2.5 mg/L, respectively. Soil and sediment toxicity data are not available for these substances.

Aquatic exposure analyses were conducted for scenarios representing potential major environmental releases due to industrial activities involving azo direct and azo reactive dyes. The likelihood of the PECs exceeding the predicted no-effect concentrations (PNECs) for azo direct dyes and azo reactive dyes was found to be low.

Considering all available lines of evidence presented in this Screening Assessment, there is a low risk of harm to organisms and the broader integrity of the environment from azo direct and azo reactive dyes evaluated in this assessment. It is concluded that these 61 azo direct dyes and 8 azo reactive dyes do not meet the criteria under paragraph 64(a) or 64(b) of CEPA 1999, as they are not entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity or that constitute or may constitute a danger to the environment on which life depends.

Human health

Azo direct dyes

For the general population of Canada, environmental media are not considered to be a significant source of exposure to the azo direct dyes; therefore, risk to human health from this source is considered to be low. Among the 61 azo direct dyes, 18 have been identified as used in products available to consumers in the Canadian marketplace. These dyes are Direct Black 56, Direct Blue 71, Direct Green 28, Direct Orange 26, Direct Orange 39, Direct Red 31, Direct Red 81 triethanolamine salt, Direct Violet 51, Direct Yellow 11, Direct Yellow 11 lithium salt, Direct Yellow 12, Direct Yellow 28, Direct Yellow 34, Direct Yellow 50, and dyes bearing CAS RN 28706-21-0, CAS RN 71033-21-1, CAS RN 83221-56-1 and CAS RN 84878-17-1.

The margins between the exposure estimates for 14 of the azo direct dyes (Direct Black 56, Direct Green 28,

Direct Orange 26, Direct Orange 39, Direct Red 81 triethanolamine salt, Direct Violet 51, Direct Yellow 28, Direct Red 31, Direct Yellow 12, Direct Yellow 50, and dyes bearing CAS RN 28706-21-0, CAS RN 71033-21-1, CAS RN 83221-56-1 and CAS RN 84878-17-1) used as dyes in textiles and the critical health effects levels were considered adequate to address uncertainties in the exposure and health effects databases.

Exposure to nine of the azo direct dyes (Direct Black 56, Direct Red 31, Direct Red 81 triethanolamine salt, Direct Yellow 12, Direct Yellow 50, and dyes bearing CAS RN 28706-21-0, CAS RN 71033-21-1, CAS RN 83221-56-1 and CAS RN 84878-17-1) used as dyes in leather products is considered to be short-term and intermittent. Therefore, the margins of exposure derived for these dyes used in textiles are considered to be protective for individuals using leather products.

Seven of the azo direct dyes (Direct Blue 71, Direct Red 31, Direct Yellow 11, Direct Yellow 11 lithium salt, Direct Yellow 12, Direct Yellow 34 and Direct Yellow 50) were identified as dyes used in paper products. It is recognized that young children may occasionally be exposed to these dyes from incidental ingestion of paper products. However, available data do not indicate that acute toxicity is a health concern about these azo direct dyes; therefore, the risk to young children from exposure to these dyes in paper products is considered to be low.

Exposure to Direct Blue 71 and Direct Yellow 11 lithium salt used as dyes in food packaging materials is not expected to be significant; therefore, the risk to human health from this use is considered to be low.

For the remaining azo direct dyes, available information did not identify sources of current exposure to the general population of Canada; therefore, risk to human health is not expected for these substances.

Some of the azo direct dyes in this assessment have effects that are of concern based on potential carcinogenicity.

Based on the information presented in this Screening Assessment, it is concluded that the above-mentioned azo direct dyes do not meet the criteria under paragraph 64(c) of CEPA 1999 as they are not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health.

Azo reactive dyes

For the general population of Canada, environmental media are not considered to be a significant source of exposure to the azo reactive dyes; therefore, the risk to human health from this source is considered to be low. Use of Reactive Black 5, Reactive Black 158 and Reactive Blue 225 as covalently bound dyes in textiles is not expected to be a significant source of exposure; therefore, the risk to human health is considered to be low for these substances. For the remaining five azo reactive dyes, available information did not identify sources of current exposure to the general population of Canada; therefore, risk to human health is not expected for these substances.

Based on the information presented in this Screening Assessment, it is concluded that the azo reactive dyes evaluated in this assessment do not meet the criteria under paragraph 64(c) of CEPA 1999 as they are not entering the environment in a quantity or concentration or under conditions that constitute or may constitute a danger in Canada to human life or health.

Overall conclusion

It is concluded that the 61 azo direct dyes and 8 azo reactive dyes evaluated in this assessment do not meet any of the criteria set out in section 64 of CEPA 1999.

Although a risk to human health has not been identified for the general population of Canada at current levels of exposure, it is recognized that some substances in this assessment have effects that are of concern based on their potential carcinogenicity. There may be a potential concern for human health if exposure of the general population of Canada to these substances were to increase through products available to consumers.

Options on how best to monitor changes in the use profile of these substances are being investigated. Stakeholders will have the opportunity to provide feedback on a consultation document, describing potential options for information gathering or preventive actions, to be published once assessments for all of the

Aromatic Azo and Benzidine-based Substance Grouping are completed.

The Screening Assessment for these substances is available on the Government of Canada's Chemical Substances Web site (www.chemicalsubstances.gc.ca).

[14-1-0]

DEPARTMENT OF INDUSTRY

RADIOCOMMUNICATION ACT

Notice No. SMSE-002-15 — Release of RSS-213, Issue 3

Notice is hereby given by Industry Canada that the following document will come into force immediately:

- Radio Standards Specification RSS-213, Issue 3, *2 GHz Licence-Exempt Personal Communications Services (LE-PCS) Devices*, which sets forth the limits and methods of measurement of the electromagnetic and operational compatibility of LE-PCS devices operating in the band 1920-1930 MHz.

The above document was published to reflect the technical and certification requirements of LE-PCS devices.

General information

The review of RSS-213 has been coordinated with industry through the Radio Advisory Board of Canada (RABC).

The Radio Equipment Standards lists will be amended accordingly.

Submitting comments

Interested parties are requested to provide their comments within 90 days of the date of publication of this notice in electronic format (Microsoft Word or Adobe PDF) to the Manager, Radio Equipment Standards (res.nmr@ic.gc.ca). Comments received will be taken into consideration in the preparation of the next issue of this RSS.

Obtaining copies

Copies of this notice and of documents referred to herein are available electronically on Industry Canada's Spectrum Management and Telecommunications Web site at <http://www.ic.gc.ca/spectrum>.

Official versions of *Canada Gazette* notices can be viewed at <http://www.gazette.gc.ca/rp-pr/index-eng.html>.

February 24, 2015

DANIEL DUGUAY
Director General
Engineering, Planning and Standards Branch

[14-1-0]

[Footnote 1](#)

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