



SECTION V — ANNEX 1

GreenScreen Chemical Hazard Criteria™

SECTION V — ANNEX 1

GreenScreen Chemical Hazard Criteria

SINGLE HAZARD ENDPOINTS Group I Human Health Effects (Group I Human)

TABLE A1.1: **Carcinogenicity (C)**

Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)
Data	GHS Criteria & Guidance		GHS Category 1A (Known) or 1B (Presumed) for any route of exposure	GHS Category 2 (Suspected) for any route of exposure or limited or marginal evidence of carcinogenicity in animals	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
A Lists	US EPA - IRIS Carcinogens (1986)	Authoritative	Group A or B1 or B2	Group C	Group E
	US EPA - IRIS Carcinogens (1996, 1999, 2005)	Authoritative	Known or Likely		Not Likely
	EU - REACH Annex XVII CMRs	Authoritative	Category 1 or 2	Category 3	
	EU - Annex VI CMRs	Authoritative	Carc 1A or 1B	Carc 2	
	EU - GHS (H-Statements)	Authoritative	H350 or H350i	H351	
	EU - R-Phrases ¹	Authoritative	R45 or R49	R40	
	EU - SVHC Candidate List	Authoritative	Carcinogenic - Candidate list		
	EU - SVHC Prioritisation List	Authoritative	Carcinogenic - Prioritized for listing		
	EU - SVHC Authorisation List	Authoritative	Carcinogenic - Banned unless Authorised		
	GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1A or 1B or H350 or H350i	Category 2 or H351	Not Classified
	GHS - [NEW ZEALAND]	Screening	6.7A	6.7B	Not Classified
	IARC	Authoritative	Group 1 or 2a	Group 2b	Group 4
	MAK	Authoritative	Carcinogen Group 1 or 2	Carcinogen Group 3A or 3B or 4 or 5	
	US CDC - Occupational Carcinogens	Authoritative	Occupational Carcinogen		
	US NIH - Report on Carcinogens	Authoritative	Known or Reasonably Anticipated		
	CA EPA - Prop 65	Authoritative	Carcinogen		
	B Lists	US EPA - IRIS Carcinogens (1986)	Authoritative	Group D	
US EPA - IRIS Carcinogens (1999)		Authoritative	Suggestive Evidence, but not sufficient to assess human carcinogenic potential		
US EPA - IRIS Carcinogens (2005)		Authoritative	Suggestive evidence of carcinogenic potential		
IARC		Authoritative	Group 3		
CA EPA - Prop 65 (with qualifications) ²		Authoritative	Carcinogen - specific to chemical form or exposure route		

SECTION V — ANNEX 1

GreenScreen Chemical Hazard Criteria

TABLE A1.2: Mutagenicity/Genotoxicity (M)

Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)
			Data	GHS Criteria & Guidance	
A Lists	EU – REACH Annex XVII CMRs	Authoritative	Category 1 or 2	Category 3	
	EU – Annex VI CMRs	Authoritative	Mutagen 1A or 1B	Mutagen 2	
	EU – GHS (H-Statements)	Authoritative	H340	H341	
	EU – R-Phrases ¹	Authoritative	R46	R68	
	EU – SVHC Candidate List	Authoritative	Mutagenic – Candidate list		
	EU – SVHC Prioritisation List	Authoritative	Mutagenic – Prioritized for listing		
	EU – SVHC Authorisation List	Authoritative	Mutagenic – Banned unless Authorised		
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1A or 1B or H340	Category 2 or H341	Not Classified
	GHS – [NEW ZEALAND]	Screening	6.6A	6.6B	Not Classified
B Lists	MAK	Authoritative	Germ Cell Mutagen 1 or 2 or 3a		
	MAK	Authoritative	Germ Cell Mutagen 3b or 5		

TABLE A1.3: Reproductive Toxicity (R)

Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)
			Data	GHS Criteria & Guidance Note: GHS Reproductive Toxicity includes both reproductive and developmental effects, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on reproductive effects alone.	
A Lists	EU – GHS (H-Statements)	Authoritative	H360F or H360FD or H360Fd	H360Df or H361f or H361fd	
	EU – R-Phrases ¹	Authoritative	R60	R62	
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1A (Known) or Category 1B (Presumed) or H360F or H360FD or H360Fd	Category 2 (Suspected) or H360Df or H361f or H361fd	Not Classified for reproductive effects
	GHS – [NEW ZEALAND]	Screening	6.8A	6.8B	Not Classified for reproductive effects
	US NIH – Reproductive & Developmental Monographs	Authoritative	Clear Evidence of Adverse Effects – Reproductive		Clear Evidence of No Adverse Effects – Reproductive
	CA EPA – Prop 65	Authoritative	Reproductive Toxicity – Male or Female		
	B Lists	US NIH – Reproductive & Developmental Monographs	Authoritative	Limited Evidence of Adverse Effects – Reproductive or Some Evidence of Adverse Effects – Reproductive	
				Limited Evidence of No Adverse Effects – Reproductive or Some Evidence of No Adverse Effects – Reproductive	
Insufficient Evidence for a Conclusion – Reproductive Toxicity					
CA EPA – Prop 65 (with qualifications) ²		Authoritative	Reproductive Toxicity – Male or Female		

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.4: **Developmental Toxicity (D)**

Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)
Data	GHS Criteria & Guidance Note: GHS Reproductive Toxicity includes both reproductive and developmental effects, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on developmental effects alone.		GHS Category 1A (Known) or 1B (Presumed) for any route of exposure or effects on or via lactation	GHS Category 2 (Suspected) for any route of exposure or limited or marginal evidence of developmental toxicity in animals	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
Developmental Toxicity (D)	A Lists				
	EU - GHS (H-Statements)	Authoritative	H360FD or H360D or H360Df or H362	H360Fd or H361d or H361fd	
	EU - R-Phrases ¹	Authoritative	R61 or R64	R63	
	GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1A or 1B or effects on or via lactation or H360FD or H360D or H360Df or H362	Category 2 or H360Fd or H361d or H361fd	Not Classified for developmental effects
	GHS - [NEW ZEALAND]	Screening	6.8A or 6.8C	6.8B	Not Classified for developmental effects
	US NIH - Reproductive & Developmental Monographs	Authoritative	Clear Evidence of Adverse Effects - Developmental		Clear Evidence of No Adverse Effects - Developmental
	CA EPA - Prop 65	Authoritative	Developmental toxicity		
	B Lists				
	G&L - Neurotoxic Chemicals	Screening	Developmental Neurotoxicant		
	Boyes - Neurotoxicants	Screening	Developmental Neurotoxicity		
	MAK	Authoritative	Pregnancy Risk Group A or B	Pregnancy Risk Group C	Pregnancy Risk Group D
	US NIH - Reproductive & Developmental Monographs	Authoritative	Limited Evidence of Adverse Effects - Developmental or Some Evidence of Adverse Effects - Developmental	Limited Evidence of No Adverse Effects - Reproductive or Some Evidence of No Adverse Effects - Developmental	Insufficient Evidence for a Conclusion - Developmental Toxicity
	CA EPA - Prop 65 (with qualifications) ²	Authoritative	Developmental toxicity		

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

 TABLE A1.5: **Endocrine Activity (E)**

Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)
Data	All Available Data		Evidence of endocrine activity and related human health effect	Evidence of endocrine activity	Adequate data available and negative studies
A Lists	EU - Priority Endocrine Disrupters	Screening			Category 3a
	EU - SVHC Candidate List	Authoritative	Equivalent Concern - Candidate List: endocrine disrupting properties cause probable serious effects to the environment or human health		
	EU - SVHC Prioritisation List	Authoritative	Equivalent Concern - Prioritized for Listing: endocrine disrupting properties cause probable serious effects to the environment or human health		
	EU - SVHC Authorisation List	Authoritative	Equivalent Concern - Banned Unless Authorized: endocrine disrupting properties cause probable serious effects to the environment or human health		
B Lists	EU - Priority Endocrine Disrupters	Screening	Category 1 or 2		
			Category 3b		
	OSPAR	Authoritative	Endocrine Disruptor - chemical for priority action		
	OSPAR	Screening	Endocrine Disruptor - substance of possible concern		
	ChemSec - SIN List	Screening	Endocrine Disruption		
TEDX - Potential Endocrine Disruptors	Screening	Potential Endocrine Disruptor			

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

SINGLE HAZARD ENDPOINTS

Group II and II* Human Health Effects (Group II and II* Human)

TABLE A1.6: **Acute Mammalian Toxicity (AT)**

Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)
Data	GHS Criteria & Guidance		GHS Category 1 or 2 for any route of exposure	GHS Category 3 for any route of exposure	GHS Category 4 for any route of exposure	<ul style="list-style-type: none"> · GHS Category 5; or · Adequate data available and negative studies; and · GHS not classified
Guidance Values for Animal Data (see GHS for further information)	Oral LD50 (mg/kg)		≤50	>50 - 300	>300 - 2000	>2000
	Dermal LD50 (mg/kg)		≤200	>200 - 1000	>1000 - 2000	>2000
	Inhalation - Gas or Vapor LC50(mg/L)		≤2	>2 - 10	>10 - 20	>20
	Inhalation - Dust/Mist/Fumes LC50 (mg/L)		≤0.5	>0.5 - 1.0	>1 - 5	>5
A Lists	DOT ¹	Authoritative	Class 2.3 Group A, or Class 6.1 Group 1 or Group 2	Class 6.1 Group 3		
	EU - GHS (H-Statements)	Authoritative	H300 or H310 or H330	H301 or H311 or H331	H302 or H312 or H332	
	EU - R-Phrases ¹	Authoritative	R26 or R27 or R28			
	GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1 or 2 or H300 or H310 or H330	Category 3 or H301 or H311 or H331	Category 4 or H302 or H312 or H332	Category 5 or H303 or H313 or H333 or Not Classified
	GHS - [NEW ZEALAND]	Screening	6.1A or 6.1B	6.1C	6.1D	6.1E or Not Classified
B Lists	US EPA - EPCRA Extremely Hazardous Substances	Authoritative	Extremely Hazardous Substance			
	EU - R-Phrases	Authoritative			R20 or R21 or R22	
			R23 or R24 or R25			
	Québec CSST - WHMIS 1988	Screening	D1A Toxic			
D1B Toxic						

SECTION V — ANNEX 1

GreenScreen Chemical Hazard Criteria

TABLE A1.7: Systemic Toxicity/Organ Effects (ST)

	Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	
Systemic Toxicity/Organ Effects (ST)	Single Exposure	Data Note: GHS includes neurotoxicity under Systemic Toxicity, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on any effects other than neurological/neurobehavioral effects.	GHS Criteria & Guidance		GHS Category 1 Single Exposure for any route of exposure	GHS Category 2 Single Exposure for any route of exposure	GHS Category 3 Single Exposure for any route of exposure	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
		GHS Guidance Values for Animal Data (see GHS for further information) Note above applies here too.	Oral (mg/kg-bw)		≤300	>300 - 2000		
			Dermal (mg/kg-bw)		≤1000	>1000 - 2000		
			Inhalation-Gas or Vapor (mg/L/4h)		≤10	>10 - 20		
		Inhalation-Dust/Mist/Fumes (mg/L/4h)		≤1.0	>1.0 - 5.0			
	A Lists	EU - GHS (H-Statements)	Authoritative				H335	
		EU - R-Phrases ¹	Authoritative				R37	
		GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening				H335	
	Single Exposure - Aspiration Hazards	Data	GHS Criteria & Guidance			GHS Category 1	GHS Category 2	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
		A Lists	EU - GHS (H-Statements)	Authoritative		H304		
			EU - R-Phrases ¹	Authoritative		R65		
			GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening		Category 1 or H304	Category 2 or H305	"Not Classified"
	B Lists	GHS - [NEW ZEALAND]	Screening		6.1E			
Repeated* Exposure	Data Note: GHS includes neurotoxicity under Systemic Toxicity, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on any effects other than neurological/neurobehavioral effects.	GHS Criteria & Guidance			GHS Category 1 Repeated Exposure for any route of exposure	GHS Category 2 Repeated Exposure for any route of exposure	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified 	
	GHS Guidance Values for Animal Data (see GHS for further information) Note above applies here too.	Oral (mg/kg-bw/day)			≤10	>10 - 100	>100	
		Dermal (mg/kg-bw/day)			≤20	>20 - 200	>200	
		Inhalation-Gas or Vapor (mg/L/6h/day)			≤0.2	>0.2 - 1.0	>1.0	
		Inhalation-Dust/Mist/Fumes (mg/L/6h/day)			≤0.02	>0.02 - 0.2	>0.2	
	A Lists	EU - SVHC Candidate List	Authoritative			Equivalent Concern - Candidate List		
		EU - SVHC Prioritisation List	Authoritative			Equivalent Concern - Prioritized for Listing		
EU - SVHC Authorisation List		Authoritative			Equivalent Concern - Banned Unless Authorized			

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.8: **Neurotoxicity (N)**

	Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	
	Neurotoxicity (N)	Single Exposure	Data Note: GHS includes neurotoxicity under Systemic Toxicity, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on neurological/neurobehavioral effects alone.	GHS Criteria Systemic Toxicity/ Organ Effects using USEPA Risk Assessment Guidance to define applicable neurotoxic effects.		GHS Category 1 Single Exposure for any route of exposure	GHS Category 2 Single Exposure for any route of exposure	GHS Category 3 Single Exposure for any route of exposure
GHS Guidance Values for Animal Data (see GHS for further information). Note above applies here too			Oral (mg/kg-bw)		≤300	>300 - 2000		
Dermal (mg/kg-bw)				≤1000	>1000 - 2000			
Inhalation-Gas or Vapor (mg/L/4h)				≤10	>10 - 20			
Inhalation-Dust/Mist/Fumes (mg/L/4h)				≤1.0	>1.0 - 5.0			
B Lists		EU – GHS (H-Statements)	Authoritative				H336	
		EU – R-Phrases ¹	Authoritative				R67	
		GHS –[COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening				H336	
Repeated* Exposure		Data Note: GHS includes neurotoxicity under Systemic Toxicity, while GreenScreen separates them into two distinct hazard endpoints. This classification must be based on neurological/neurobehavioral effects alone.	GHS Criteria Systemic Toxicity/ Organ Effects using USEPA Risk Assessment Guidance to define applicable neurotoxic effects.			GHS Category 1 Repeated Exposure for any route of exposure	GHS Category 2 Repeated Exposure for any route of exposure	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
		GHS Guidance Values for Animal Data (see GHS for further information). Note above applies here too.	Oral (mg/kg-bw/day)			≤10	>10 - 100	>100
	Dermal (mg/kg-bw/day)				≤20	>20 - 200	>200	
	Inhalation-Gas or Vapor (mg/L/6h/day)				≤0.2	>0.2 - 1.0	>1.0	
	Inhalation-Dust/Mist/Fumes (mg/L/6h/day)				≤0.02	>0.02 - 0.2	>0.2	
Either	B Lists	Boyes – Neurotoxicants	Screening	Neurotoxic ³				
		G&L – Neurotoxic Chemicals	Screening	Neurotoxic ³				

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.9: **Skin Sensitization (SnS*)**

	Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)	
	Skin Sensitization (SnS*)	Data	GHS Criteria & Guidance		GHS Category 1A (high frequency of occurrence)	GHS Category 1B (low to moderate frequency of occurrence)	<ul style="list-style-type: none"> • Adequate data available and negative studies; and • GHS not classified
A Lists		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1A	Category 1B	Not Classified	
B Lists		MAK		Authoritative	Sensitizing Substance Sh – Danger of skin sensitization or Sah – Danger of airway & skin sensitization		
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)		Screening	H317		
		EU – GHS (H-Statements)		Authoritative	H317		
		EU – R-Phrases ¹		Authoritative	R43		
GHS – [NEW ZEALAND]		Screening	6.5B				

TABLE A1.10: **Respiratory Sensitization (SnR*)**

	Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)	
	Respiratory Sensitization (SnR*)	Data	GHS Criteria & Guidance		GHS Category 1A (high frequency of occurrence)	GHS Category 1B (low to moderate frequency of occurrence)	<ul style="list-style-type: none"> • Adequate data available and negative studies; and • GHS not classified
A Lists		EU – SVHC Candidate List		Authoritative	Equivalent Concern – Candidate List: Respiratory sensitizing		
		EU – SVHC Prioritisation List		Authoritative	Equivalent Concern – Prioritized for Listing: Respiratory sensitizing		
		EU – SVHC Authorisation List		Authoritative	Equivalent Concern – Banned Unless Authorized: Respiratory sensitizing		
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)		Screening	Category 1A	Category 1B	Not Classified
B Lists		MAK		Authoritative	Sensitizing Substance Sa – Danger of airway sensitization or Sah – Danger of airway & skin sensitization		
		AOEC – Asthmagens		Authoritative	Asthmagen (G)		
					Asthmagen (Rr) and/ or (Rs) and/or (Rrs)		
		EU – GHS (H-Statements)		Authoritative	H334		
		EU – R-Phrases ¹		Authoritative	R42		
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)		Screening	H334			
GHS – [NEW ZEALAND]		Screening	6.5A				

CONTINUED

SECTION V — ANNEX 1

GreenScreen Chemical Hazard Criteria

TABLE A1.1.1: Skin Irritation (IrS)

Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	
Skin Irritation (IrS)	Data	GHS Criteria & Guidance		GHS Category 1 (Corrosive)	GHS Category 2 (Irritant)	GHS Category 3 (Mild irritant)	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
	A Lists	EU – GHS (H-Statements)	Authoritative	H314	H315		
		EU – R-Phrases ¹	Authoritative	R34 or R35	R38		
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1 or H314	Category 2 or H315	Category 3 or H316	Not Classified
		GHS – [NEW ZEALAND]	Screening	8.2A or 8.2B or 8.2C	6.3A	6.3B	Not Classified

TABLE A1.1.2: Eye Irritation (IrE)

Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	
Eye Irritation (IrE)	Data	GHS Criteria & Guidance		GHS Category 1 (Irreversible)	GHS Category 2A (Irritating)	GHS Category 2B (Mildly irritating)	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
	A Lists	EU – GHS (H-Statements)	Authoritative	H318	H319	H320	
		EU – R-Phrases ¹	Authoritative	R41			
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1	Category 2A	Category 2B	Not Classified
		GHS – [NEW ZEALAND]	Screening	8.3A			Not Classified
	B Lists	EU – R-Phrases ¹	Authoritative		R36		
		GHS – [NEW ZEALAND]	Screening		6.4A		

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

SINGLE HAZARD ENDPOINTS
Ecotoxicity (Ecotox)

 TABLE A1.13: **Acute Aquatic Toxicity (AA)**

Information Type	Measurement	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)
			Very High (vH)	High (H)	Moderate (M)	Low (L)
Data	GHS Criteria & Guidance		GHS Category 1	GHS Category 2	GHS Category 3	<ul style="list-style-type: none"> Adequate data available and negative studies; and GHS not classified
Guidance Values (see GHS for further information)	LC50 or EC50 (mg/L)		≤1	>1 to 10	> 10 to 100	>100
A Lists	EU – GHS (H-Statements)	Authoritative	H400			
	EU – R-Phrases ¹	Authoritative	R50			
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1 or H400	Category 2 or H401	Category 3 or H402	Not Classified
	GHS – [NEW ZEALAND]	Screening	9.1A			Not Classified
B Lists	EU – R-Phrases ¹	Authoritative		R51 or R52		
	GHS – [NEW ZEALAND]	Screening		9.1D		

 TABLE A1.14: **Chronic Aquatic Toxicity (CA)**

Information Type	Measurement	Very High (vH)	High (H)	Moderate (M)	Low (L)
Data	Guidance Value (mg/L)	≤0.1	>0.1 to 1.0	> 1.0 to 10	>10

 TABLE A1.15: **Persistence (P)**

Information Type	Media & Measurement	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	Very Low (vL)
Data	Soil or Sediment (1/2 life in days OR Result)		>180 or recalcitrant	>60 to 180	16 to 60	< 16 OR GHS "Rapid degradability"	Meets 10-day window in "Ready Biodegradation Test"
	Water (1/2 life in days OR Result)		> 60 or recalcitrant	> 40 to 60	16 to 40	< 16 OR GHS "Rapid degradability"	Meets 10-day window in "Ready Biodegradation Test"
	Air (1/2 life in days OR Result)		> 5 or recalcitrant	>2 to 5		< 2	
	Long-Range Environmental Transport			Evidence	Suggestive Evidence		
	B Lists	EC - CEPA DSL	Screening	Persistent			

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.16: **Bioaccumulation Potential (B)**

Information Type	Measurement		Very High (vH)	High (H)	Moderate (M)	Low (L)	Very Low (vL)
Bioaccumulation Potential (B)	BAF		> 5000	> 1000 to 5000	> 500 to 1000	> 100 to 500	≤ 100
	(Bioaccumulation Factor)						
	BCF		> 5000	> 1000 to 5000	> 500 to 1000	> 100 to 500	≤ 100
	(Bioconcentration Factor)						
	Log Kow		> 5.0	> 4.5 to 5.0	> 4.0 to 4.5		≤ 4
	(Log octanol-water partition coefficient)						
	Monitoring Data (Presence in humans or wildlife)				Evidence	Suggestive Evidence	
A Lists	EC – CEPA DSL	Screening	Bioaccumulative				

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

SINGLE HAZARD ENDPOINTS
Physical Hazards

 TABLE A1.17: **Reactivity (Rx)**

Information Type	Measurement	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)
Data - GHS Criteria & Guidance	Explosives		GHS Unstable	GHS Division 1.1, 1.2, or 1.3	GHS Division 1.4 or 1.5	Division 1.6 or Adequate data available and GHS not classified
	Self-reactive Substances		GHS Type A or B	GHS Type C or D	GHS Type E or F	Type G or Adequate data available and GHS not classified
	Substances which on contact with water emit flammable gases		GHS Category 1	GHS Category 2	GHS Category 3	Adequate data available and GHS not classified
	Oxidizing Gases			GHS Category 1		Adequate data available and GHS not classified
	Oxidizing Liquids and Solids		GHS Category 1	GHS Category 2	GHS Category 3	Adequate data available and GHS not classified
	Organic Peroxides		GHS Type A or B	GHS Type C or D	GHS Type E or F	Type G or Adequate data available and GHS not classified
	Self-heating Substances			GHS Category 1	GHS Category 2	Adequate data available and GHS not classified
	Substances Corrosive to Metal				GHS Category 1	Adequate data available and GHS not classified
	Desensitized Explosives			GHS Category 1 or 2	GHS Category 3 or 4	Adequate data available and GHS not classified
A Lists	DOT ¹	Authoritative		Class 1 Group 1.1, 1.2, or 1.3	Class 1 Group 1.4, 1.5, or 1.6	
				Class 4.2 Group 2	Class 4.2 Group 3	
			Class 4.3 Group 1	Class 4.3 Group 2	Class 4.3 Group 3	
			Class 5.1 Group 1	Class 5.1 Group 2	Class 5.1 Group 3	
			Class 5.2 Type B	Class 5.2 Type C or D	Class 5.2 Type E or F	Class 5.2 Type G
	EU - GHS (H-Statements)	Authoritative	H200, H240, H241, H260, H271, EU-H032	H201, H202, H203, H251, H270	H204, H205, H252, H290	
	EU - R-Phrases ¹	Authoritative	R09, R32			
GHS - [NEW ZEALAND]	Screening	4.1.2A or 4.1.2B or 4.3A or 5.1.1A or 5.2A or 5.2B	1.1 or 1.2 or 1.3, or 4.1.2C or 4.1.2D, 4.2B, or 4.3B, or 5.1.2A, or 5.1.1B, or 5.2C or 5.2D	1.4 or 1.5, or 4.1.2E or 4.1.2F, or 4.2C, or 4.3C, or 5.1.1C, or 5.2E or 5.2F, 8.1A	1.6, 4.1.2G, or 5.2G	
GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	See GreenScreen List Translator Map in Annex 12				
B Lists	DOT ¹	Authoritative	Class 4.1, Class 5.2 Type A			
	EU - GHS (H-Statements)	Authoritative	EU-H029, EU-H031			
			H261, H272			
			H242			
	EU - R-Phrases ¹	Authoritative	R29, R31			
			R01, R06, R07, R15			
			R02, R04, R05, R08, R14, R16, R19, R44			
GHS - [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	H242				
		H206, H207, H261, H272				
Québec CSST - WHMIS 1988	Screening	B6, C, or F				

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.18: **Flammability (F)**

Information Type	Measurement		Very High (vH)	High (H)	Moderate (M)	Low (L)	
Data – GHS Criteria & Guidance	Flammable Liquid		GHS Category 1	GHS Category 2	GHS Category 3 or 4	Adequate data available and GHS not classified	
	Flammable Gases (including pyrophoric gases and chemically unstable gases)		GHS Category 1A, or pyrophoric gas, or chemically unstable gas	GHS Category 1B	GHS Category 2	Adequate data available and GHS not classified	
	Flammable Solids			GHS Category 1	GHS Category 2	Adequate data available and GHS not classified	
	Aerosols			GHS Category 1	GHS Category 2	GHS Category 3 or Adequate data available and GHS not classified	
	Pyrophoric Liquids			GHS Category 1		Adequate data available and GHS not classified	
	Pyrophoric Solids				GHS Category 1	Adequate data available and GHS not classified	
A Lists	DOT ¹	Authoritative	Class 3 Group 1	Class 3 Group 2 or Class 4.2 Group 1	Class 3 Group 3		
	EU – GHS (H-Statements)	Authoritative	H220, H224, H230, H231	H222, H225, H250	H223, H226, H227		
	EU – R-Phrases ¹	Authoritative		R17			
	Québec CSST – WHMIS 1988	Screening		B1	B3		
	GHS – [NEW ZEALAND]	Screening	3.1A	3.1B, or 4.1.1A or 4.2A	2.1.1B or 3.1C or 3.1D, or 4.1.1B		
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	See GreenScreen List Translator Map in Annex 12				
B Lists	DOT ¹	Authoritative		Class 2.1			
	EU – GHS (H-Statements)	Authoritative		H221, H228			
	EU – R-Phrases ¹	Authoritative	R10 (Gas or Solid), R11 (Solid)				
			R10 (Liquid only)				
			R11 (Liquid only)				
			R12 (Gas only)				
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening		H221, H228			
GHS – [NEW ZEALAND]	Screening	2.1.1A, 2.1.2A					
Québec CSST – WHMIS 1988	Authoritative		B4 or B5				
		B2					

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

MULTIPLE HAZARD ENDPOINTS

TABLE A1.19: **Carcinogens, Mutagens, Reproductive Toxins (CMR)**

Carcinogens, Mutagens, Reproductive Toxins (CMR)	Information Type	Information Source	List Category	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed
	A Lists	ChemSec - SIN List	CMR - Carcinogen, Mutagen &/or Reproductive Toxicant	Screening					P1

TABLE A1.20: **Reproductive and/or Developmental Toxicity**

Reproductive and/or Developmental Toxicity	Information Type	Information Source	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed
	A Lists	EU - R-Phrases ¹	Authoritative	R60/61 "May impair fertility" and "May cause harm to the unborn child"				1
B Lists	EU - REACH Annex XVII CMRs	Authoritative	Toxic to Reproduction Category 1 - Substances known to impair fertility or cause Developmental Toxicity in humans				1	Reproductive and/or Developmental Toxicity
		Authoritative	Toxic to Reproduction Category 2 - Substances which should be regarded as if they impair fertility or cause Developmental Toxicity in humans				1	
		Authoritative	Reproduction Category 3 - possible				UNK	
	EU - Annex VI CMRs	Authoritative	Reproductive Toxicity 1A				1	
		Authoritative	Reproductive Toxicity 1B				1	
		Authoritative	Reproductive Toxicity - Category 2				UNK	
	EU - GHS (H-Statements)	Authoritative	H360 (with no letters) "May damage fertility or the unborn child <state specific effect if known > <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard >."				1	
		Authoritative	H361 (with no letters) "Suspected of damaging fertility or the unborn child <state specific effect if known > <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard >."				UNK	
	EU - SVHC Candidate List	Authoritative	Toxic to reproduction - Candidate list				1	
	EU - SVHC Prioritisation List	Authoritative	Toxic to reproduction - Prioritized for listing				1	
EU - SVHC Authorisation List	Authoritative	Toxic to reproduction - Banned unless Authorised				1		

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.21: **Systemic Toxicity/Organ Effects and/or Neurotoxicity**

Systemic Toxicity/Organ Effects and/or Neurotoxicity	Information Type	Information Source	List Type	Very High (vH)	High (H)	Moderate (M)	Low (L)	LT Score	
Single Exposure	A Lists	EU – GHS (H-Statements)	Authoritative	H370	H371			LT-UNK	
		EU – R-Phrases ¹	Authoritative	R39 or R39/23 or R39/24 or R39/25 or R39/26 or R39/27 or R39/28	R68/20 or R68/21 or R68/22			LT-UNK	
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening	Category 1 or H370	Category 2 or H371	Category 3	Not Classified	LT-UNK	
		GHS – [NEW ZEALAND]	Screening	6.9A	6.9B		Not Classified	LT-UNK	
	A Lists	EU – GHS (H-Statements)	Authoritative		H372	H373			LT-UNK
		EU – R-Phrases ¹	Authoritative		R48/23 or R48/24 or R48/25	R33 or R48/20 or R48/21 or R48/22			LT-UNK
		GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Screening		Category 1 or H372	Category 2 or H373	Not Classified		LT-UNK
		GHS – [NEW ZEALAND]	Screening		6.9A	6.9B	Not Classified		LT-UNK
B Lists	EU – R-Phrases ¹	Authoritative		R48 – Danger of serious damage to health by prolonged exposure				LT-UNK	

TABLE A1.22: **Various Combinations of Group I, II and II* Human Health Endpoints**

Various Combinations of Group I, II and II* Endpoints	Information Type	Information Source	List Category	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed		
B Lists	EC – CEPA DSL	Inherently Toxic to Humans (iT human)	Screening					UNK	One or more of the following Human Health Effects: Carcinogenicity, Mutagenicity/Genotoxicity, Reproductive Toxicity, Developmental Toxicity, Acute Mammalian Toxicity, System Toxicity/Organ Effects.		
				MAK	Authoritative	Sensitizing Substance Sah – Danger of airway & skin sensitization				UNK	Respiratory and Skin Sensitization
					Authoritative	Sensitizing Substance SP – Danger of photo-contact sensitization				UNK	Skin and/or Respiratory Sensitization
	Québec CSST – WHMIS 1988	D2A and D2B Toxic and Very Toxic – With other effects	Screening					UNK	One or more of the following Chronic Human Health Effects: Carcinogenicity, Mutagenicity/Genotoxicity, Reproductive Toxicity, Developmental Toxicity, Skin Sensitization, Respiratory Sensitization, Systemic Toxicity/Organ Effects, Eye Irritation, Skin Irritation.		
				E Corrosive	Screening				UNK	Reactivity and/or Eye Irritation/Corrosivity and/or Skin Irritation/Corrosivity	

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.23: **PBTs, vPvBs and other combinations of Persistence, Bioaccumulation and Toxicity**

Information Type	Information Source	List Category	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed		
A Lists	EC – CEPA DSL	Persistent, Bioaccumulative and inherently Toxic (PBiTH) to humans	Screening				P1	PBT [Persistence, Bioaccumulation and Human Toxicity (Human Health Effects)]		
		Persistent, Bioaccumulative and inherently Toxic (PBiTE) to the Environment (based on aquatic organisms)	Screening				P1	PBT [Persistence, Bioaccumulation, and Acute Aquatic Toxicity or Chronic Aquatic Toxicity]		
	EU – ESIS PBT	vPvB	Screening					P1	vPvB [Persistence, Bioaccumulation]	
		PBT	Screening					P1	PBT [Persistence, Bioaccumulation and any of the following: Ecotoxicity and/or Human Toxicity (Human Health Effects)]	
		POP	Screening					P1	Persistent Organic Pollutant [Persistence, Bioaccumulation and any of the following: Ecotoxicity and/or Human Toxicity (Human Health Effects)]	
	EU – SVHC Candidate List	PBT – Candidate list	Authoritative					1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity]	
		vPvB – Candidate list	Authoritative					1	vPvB [Persistence, Bioaccumulation]	
	EU – SVHC Prioritisation List	PBT – Prioritized for listing	Authoritative					1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity]	
		vPvB – Prioritized for listing	Authoritative					1	vPvB [Persistence, Bioaccumulation]	
	EU – SVHC Authorisation List	PBT – Banned unless Authorised	Authoritative					1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity]	
		vPvB – Banned unless Authorised	Authoritative					1	vPvB [Persistence, Bioaccumulation]	
	US EPA – Priority PBTs (NWMP)	Priority PBT	Authoritative					1	PBT [Persistence, Bioaccumulation and any of the following: Ecotox and/or Human Toxicity (Human Health Effects)]	
	OR DEQ – Priority Persistent Pollutants	Priority Persistent Pollutant – Tier 1 and Tier 2	Screening					P1	PBT [Persistence, Bioaccumulation and any of the following: Ecotox and/or Human Toxicity (Human Health Effects)]	
	OSPAR	PBT – substance of possible concern	Screening					P1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity, Systemic Toxicity/Organ Effects repeated exposure]]	
			Authoritative					1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity, Systemic Toxicity/Organ Effects repeated exposure]]	
		Equivalent Concern – substance of possible concern	Screening						P1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity, Systemic Toxicity/Organ Effects repeated exposure]]
			Authoritative						P1	PBT [Persistence, Bioaccumulation, and any of the following: Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Carcinogenicity, Mutagenicity, Reproductive Toxicity, Developmental Toxicity, Systemic Toxicity/Organ Effects repeated exposure]]
	ChemSec – SIN List	vPvB	Screening					P1	Persistence and Bioaccumulation	
		PBT	Screening					P1	Persistence, Bioaccumulation and any of the following: Ecotoxicity and/or Human Toxicity (Human Health Effects)	
	UNEP Stockholm Conv – Persistent Organic Pollutants	Priority POP	Authoritative					1	PBT [Persistence, Bioaccumulation and any of the following: Ecotoxicity and/or Human Toxicity (Human Health Effects)]	
US EPA – Toxics Release Inventory PBTs	PBT	Authoritative					1	PBT [Persistence, Bioaccumulation, and Acute Aquatic Toxicity]		
WA DoE – PBT	PBT	Screening					P1	PBT [Persistence, Bioaccumulation and any of the following: Ecotoxicity and/or Human Toxicity (Human Health Effects)]		

CONTINUED

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.23: **PBTs, vPvBs and other combinations of Persistence, Bioaccumulation and Toxicity** CONTINUED

Information Type	Information Source	List Category	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed
PBTs, vPvBs and other combinations of Persistence, Bioaccumulation and Toxicity	EC – CEPA Toxic Substances (Sched 1)	CEPA Toxic	Screening				UNK	One or more of the following: Human Health Effects, Ecotoxicity, and/or Fate endpoints.
	EC – CEPA DSL	Inherently Toxic to the Environment (iT environment)	Screening				UNK	Acute Aquatic Toxicity or Chronic Aquatic Toxicity
	EU – GHS (H-Statements)	H410 – Very toxic to aquatic life with long lasting effects	Authoritative				P1	T & P and/or B [(Chronic Aquatic Toxicity and Persistence) or (Acute Aquatic Toxicity and Persistence and/or Bioaccumulation)]
		H411 – Toxic to aquatic life with long lasting effects	Authoritative				P1	
		H412 – Harmful to aquatic life with long lasting effects	Authoritative				UNK	
		H413 – May cause long-lasting harmful effects to aquatic life	Authoritative				UNK	
	EU – R-Phrases ¹	R50/53 – Very Toxic to Aquatic Organisms, May cause long-term adverse effects in the aquatic environment	Authoritative				P1	
		R51/53 – Toxic to Aquatic Organisms, May cause long-term adverse effects in the aquatic environment	Authoritative				P1	
		R52/53 – Harmful to Aquatic Organisms, May cause long-term adverse effects in the aquatic environment	Authoritative				UNK	
		R53 – May cause long-term adverse effects in the aquatic environment	Authoritative				UNK	
	GHS – [COUNTRY] Lists (Australia, Indonesia, Japan, Korea, Malaysia, Taiwan and Thailand)	Category 1 or H410	Screening				P1	
		Category 2 or H411	Screening				P1	
		Category 3 or H412	Screening				UNK	
		Category 4 or H413	Screening				UNK	
	GHS – [NEW ZEALAND]	9.1A	Screening				P1	
		9.1B	Screening				P1	
		9.1C	Screening				UNK	
		9.1D	Screening				UNK	
	German FEA – Substances Hazardous to Waters	Class 1 – Low Hazard to Waters	Screening				UNK	Any combination of the following: Acute Mammalian Toxicity, Systemic Toxicity/Organ Effects, Carcinogenicity, Reproductive Toxicity, Developmental Toxicity, Acute Aquatic Toxicity, Chronic Aquatic Toxicity, Persistence, Bioaccumulation.
		Class 2 – Hazard to Waters	Screening				P1	
Class 3 – Severe Hazard to Waters		Screening				P1		

SECTION V — ANNEX 1
GreenScreen Chemical Hazard Criteria

TABLE A1.24: **Reactivity and/or Flammability**

Information Type	Information Source	List Category	List Type	High (H)	Moderate (M)	Low (L)	LT Score	Hazard Endpoints Addressed
B Lists	EU - R-Phrases ¹	R12 - Extremely Flammable Liquid	Authoritative				UNK	Reactivity and/or Flammability
		R03 - Extreme risk of explosion by shock, friction, fire or other sources of ignition	Authoritative				UNK	
		R18 - In use, may form flammable/explosive vapour-air mixture	Authoritative				UNK	
		R30 - Can become highly flammable in use	Authoritative				UNK	

1 List is considered an information source and is used as a line of evidence to classify a hazard in a GreenScreen assessment. List is not considered a GreenScreen Specified List and is not required to be searched for a GreenScreen List Translator assessment. See Annex 10 Information Sources.

2 See Annex 11 GreenScreen Specified Lists for more information about these lists.

3 List includes consideration of both acute and chronic neurotoxic impacts. To facilitate List Translator scoring, hazards are considered under the repeated exposure sub-endpoint. This does not impact List Translator scoring, as the list can only be translated to a range of hazard levels resulting in an "UNK" designation.

4 If a country does not designate between Category 1A and Category 1B for evaluating Skin or Respiratory Sensitization, then the list should be treated as a Screening B list, with a High to Moderate hazard level in GreenScreen for GHS Category 1 classifications.