



SAFETY DATA SHEET

Revision Date: 01/31/2018

Print Date: 2/6/2018

SDS Number: R0718541

Version: 1.4

Gantrez™ ES-425 polymer
 ™ Trademark, Ashland or its subsidiaries, registered
 in various countries
 828364

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Gantrez™ ES-425
 polymer
 ™ Trademark, Ashland or its subsidiaries, registered in
 various countries

Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Personal care

Details of the supplier of the safety data sheet

Ashland
 P.O. Box 2219
 Columbus, OH 43216
 United States of America (USA)
 +1-614-790-3333

EHSProductSafety@ashland.com

Emergency telephone number

1-800-ASHLAND (1-800-274-5263)

Regulatory Information Number

1-800-325-3751

Product Information

+1-614-790-3333

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 2

Eye irritation : Category 2

Specific target organ
 systemic toxicity - single
 exposure : Category 3 (Central nervous system)

GHS label elements

Hazard pictograms :



Signal Word : Danger

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Hazard Statements : Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary Statements : **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ eye protection/ face protection.
Response:
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Storage:
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Defatter

Hazardous components

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Chemical name	CAS-No.	Classification	Concentration (%)
ETHANOL	64-17-5	Flam. Liq. 2; H225 Eye Irrit. 2A; H319 STOT SE 3; H336	52.00
BUTANOL NORMAL	71-36-3	Flam. Liq. 3; H226 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335, H336	5.00

SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
 Consult a physician.
 Show this safety data sheet to the doctor in attendance.
 Do not leave the victim unattended.
- If inhaled : Move to fresh air.
 If unconscious, place in recovery position and seek medical advice.
 Consult a physician after significant exposure.
- In case of skin contact : Remove contaminated clothing. If irritation develops, get medical attention.
 If on skin, rinse well with water.
 Wash contaminated clothing before re-use.
 If on clothes, remove clothes.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 Continue rinsing eyes during transport to hospital.
 Remove contact lenses.
 Protect unharmed eye.
- If swallowed : Obtain medical attention.



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Do NOT induce vomiting.
 Do not give milk or alcoholic beverages.
 Never give anything by mouth to an unconscious person.
 If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Causes serious eye irritation.
 May cause drowsiness or dizziness.
 No symptoms known or expected.

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
 Water spray
 Foam
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
 Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.
 Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
 Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : carbon dioxide and carbon monoxide
 formaldehyde-like
 Hydrocarbons
 toxic fumes

Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.

Further information : Do not use a solid water stream as it may scatter and spread fire.
 Fire residues and contaminated fire extinguishing water must

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be disposed of in accordance with local regulations.
Use a water spray to cool fully closed containers.

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for firefighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | |
|---|--|
| Personal precautions,
protective equipment and
emergency procedures | : Evacuate personnel to safe areas.
Remove all sources of ignition.
Use personal protective equipment.
Ensure adequate ventilation.
Beware of vapours accumulating to form explosive
concentrations. Vapours can accumulate in low areas.
Persons not wearing protective equipment should be excluded
from area of spill until clean-up has been completed. |
| Environmental precautions | : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform
respective authorities. |
| Methods and materials for
containment and cleaning up | : Contain spillage, and then collect with non-combustible
absorbent material, (e.g. sand, earth, diatomaceous earth,
vermiculite) and place in container for disposal according to
local / national regulations (see section 13). |
| Other information | : Comply with all applicable federal, state, and local regulations.
Suppress (knock down) gases/vapours/mists with a water
spray jet. |

SECTION 7. HANDLING AND STORAGE

- | | |
|-------------------------|---|
| Advice on safe handling | : Open drum carefully as content may be under pressure.
Avoid formation of aerosol.
Provide sufficient air exchange and/or exhaust in work rooms.
Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Take precautionary measures against static discharges.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Smoking, eating and drinking should be prohibited in the
application area. |
|-------------------------|---|

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For personal protection see section 8.
 Dispose of rinse water in accordance with local and national
 regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated
 place.
 Containers which are opened must be carefully resealed and
 kept upright to prevent leakage.
 Observe label precautions.
 No smoking.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ETHANOL	64-17-5	STEL	1,000 ppm	ACGIH
		TWA	1,000 ppm 1,900 mg/m3	NIOSH REL
		TWA	1,000 ppm 1,900 mg/m3	OSHA Z-1
		TWA	1,000 ppm 1,900 mg/m3	OSHA P0
		PEL	1,000 ppm 1,900 mg/m3	CAL PEL
BUTANOL NORMAL	71-36-3	TWA	20 ppm	ACGIH
		C	50 ppm 150 mg/m3	NIOSH REL
		TWA	100 ppm 300 mg/m3	OSHA Z-1
		C	50 ppm 150 mg/m3	OSHA P0
		C	50 ppm 150 mg/m3	CAL PEL

Engineering measures : Provide sufficient mechanical (general and/or local exhaust)
 ventilation to maintain exposure below exposure guidelines (if
 applicable) or below levels that cause known, suspected or
 apparent adverse effects.

Personal protective equipment

Hand protection

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Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	: Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist. Maintain eye wash station in immediate work area.
Skin and body protection	: Wear as appropriate: Impervious clothing Safety shoes Flame-resistant clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear resistant gloves (consult your safety equipment supplier).
Hygiene measures	: Wash hands before breaks and at the end of workday. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: viscous
Physical state	: liquid
Colour	: clear
Odour	: alcohol-like
Odour Threshold	: No data available
pH	: No data available
Melting point/range	: No data available
Melting point/freezing point	No data available
Boiling point/boiling range	: 173.3 °F / 78.5 °C
Flash point	: 11 °C
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available

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Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : 53.3 hPa (19 °C)

Relative vapour density : No data available

Relative density : No data available

Density : 0.977 g/cm³

Solubility(ies)

Water solubility : insoluble

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Vapours may form explosive mixture with air.

Conditions to avoid : excessive heat
 Heat, flames and sparks.

Incompatible materials : Acids
 Alkali metals



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aluminum
 Ammonia
 Bases
 halogens
 inorganic materials
 Lead
 Oxidizing agents
 sodium

Hazardous decomposition
 products

No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Inhalation
 Skin contact
 Eye Contact
 Ingestion

Acute toxicity

Not classified based on available information.

Components:

ETHANOL:

Acute oral toxicity : LD50 (Rat): 7,060 mg/kg

Acute inhalation toxicity : LC50 (Rat): 117 - 125 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour

Acute dermal toxicity : LDLo (Rabbit): 20 g/kg

BUTANOL NORMAL:

Acute oral toxicity : LD50 (Rat): 790 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 24 mg/l
 Exposure time: 4 h
 Test atmosphere: vapour
 Assessment: Not classified as acutely toxic by inhalation
 under GHS.

Acute dermal toxicity : LD50 (Rabbit): 3,400 mg/kg

Skin corrosion/irritation

Not classified based on available information.



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Product:

Result: Repeated exposure may cause skin dryness or cracking.

Components:

ETHANOL:

Result: Slight, transient irritation

BUTANOL NORMAL:

Result: Irritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: May cause irreversible eye damage.

Components:

ETHANOL:

Result: Irritating to eyes.

BUTANOL NORMAL:

Result: Corrosive

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

Product:

Test Type: Human Repeat Insult Patch Testing (HRIPT)

Assessment: Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro

: Test Type: unscheduled DNA synthesis assay

Test species: rat hepatocytes

Result: negative

: Test Type: In vitro mammalian cell gene mutation test

Test species: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

STOT - single exposure



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May cause drowsiness or dizziness.

Components:

ETHANOL:

Assessment: May cause drowsiness or dizziness.

BUTANOL NORMAL:

Target Organs: Respiratory system

Assessment: May cause respiratory irritation.

Target Organs: Central nervous system

Assessment: May cause drowsiness or dizziness.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Product:

Species: Rat

Application Route: Inhalation

Exposure time: CUST-N11.00322330

Remarks: No significant adverse effects were reported

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Further information

Product:

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans

ETHANOL

64-17-5

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

Components:**ETHANOL:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 12,000 - 16,000 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Test Type: static test

BUTANOL NORMAL:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 100 - 500 mg/l
Exposure time: 96 h
Test Type: static test
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,897 - 2,072 mg/l
Exposure time: 48 h
Test Type: static test
Method: Static
Remarks: Intoxication

Persistence and degradability**Product:**

Biodegradability : Concentration: 100 mg/l
Result: Not readily biodegradable.
Exposure time: 28 d
Method: OECD Test Guideline 301F

Components:**BUTANOL NORMAL:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 98 %
Exposure time: 19 d

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Method: OECD Test Guideline 301E

Biochemical Oxygen Demand (BOD) : Theoretical oxygen demand
 2.59 mg/g

Chemical Oxygen Demand (COD) : 2.45 mg/g
 Method: Chemical oxygen demand

No data available

Bioaccumulative potential**Components:****ETHANOL:**

Partition coefficient: n-octanol/water : log Pow: -0.31

BUTANOL NORMAL:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
 Bioconcentration factor (BCF): 0.38
 Exposure time: 24 h
 Concentration: 921 mg/l
 Method: Static

Partition coefficient: n-octanol/water : log Pow: 0.88

No data available

Mobility in soil**Components:**

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

General advice : Do not dispose of waste into sewer.
 Do not contaminate ponds, waterways or ditches with chemical or used container.
 Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and



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federal regulations.

Contaminated packaging : Empty remaining contents.
 Dispose of as unused product.
 Empty containers should be taken to an approved waste
 handling site for recycling or disposal.
 Do not re-use empty containers.
 Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
-----------	----------------------	---------------	--------------------	---------------	------------------------------

MX_DG

UN 1866	RESIN SOLUTION	3		II	
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INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN 1866	Resin solution	3		II	
---------	----------------	---	--	----	--

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN 1866	Resin solution	3		II	
---------	----------------	---	--	----	--

INTERNATIONAL MARITIME DANGEROUS GOODS

UN 1866	RESIN SOLUTION	3		II	
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TDG INWT_C

UN 1866	RESIN SOLUTION	3		II	
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TDG RAIL_C

UN 1866	RESIN SOLUTION	3		II	
---------	----------------	---	--	----	--

TDG ROAD_C

UN 1866	RESIN SOLUTION	3		II	
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U.S. DOT - INLAND WATERWAYS

UN	1866	Resin solution	3	II

CFR RAIL C

UN	1866	Resin solution	3	II

U.S. DOT - ROAD

UN	1866	Resin solution	3	II

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant	no
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Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION
EPCRA - Emergency Planning and Community Right-to-Know Act
CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
BUTANOL NORMAL	71-36-3	5000	100000

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
 Serious eye damage or eye irritation
 Specific target organ toxicity (single or repeated exposure)

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 The following components are subject to reporting levels established by SARA Title III, Section 313:
 BUTANOL NORMAL 71-36-3 5.00 %

Pennsylvania Right To Know
 ETHANOL

64-17-5



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MALEIC ACID MONOBUTYL ESTER-VINYL 25119-68-0
 METHYL ETHER CO

MALEIC ACID MONOETHYL ESTER VINYL 25087-06-3
 METHYL ETHER COPOLYMER

BUTANOL NORMAL 71-36-3

New Jersey Right To Know

ETHANOL 64-17-5

MALEIC ACID MONOBUTYL ESTER-VINYL 25119-68-0
 METHYL ETHER CO

MALEIC ACID MONOETHYL ESTER VINYL 25087-06-3
 METHYL ETHER COPOLYMER

BUTANOL NORMAL 71-36-3

California Prop 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TSCA : On TSCA Inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

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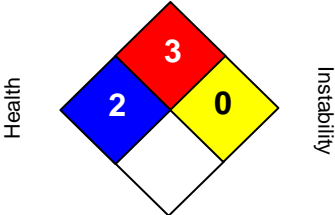
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SECTION 16. OTHER INFORMATION

Further information

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NFPA:	HMIS III:						
<p>Flammability</p> <p>Health</p> <p>Instability</p> <p>Special hazard.</p> 	<table border="1"> <tr> <td>HEALTH</td><td>2</td></tr> <tr> <td>FLAMMABILITY</td><td>3</td></tr> <tr> <td>PHYSICAL HAZARD</td><td>0</td></tr> </table> <p>0 = not significant, 1 = Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic</p>	HEALTH	2	FLAMMABILITY	3	PHYSICAL HAZARD	0
HEALTH	2						
FLAMMABILITY	3						
PHYSICAL HAZARD	0						

NFPA Flammable and Combustible Liquids Classification

Flammable Liquid Class IB

Full text of H-Statements

H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.

Sources of key data used to compile the Safety Data Sheet

Ashland internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative