



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

## Section 1 - Chemical Product and Company Identification

**1.1 MSDS Name:** Potassium Formate

**1.2 Product Code:** POFNL45

**1.3 Relevant identified uses of the substance or mixture and uses advised against:**

Laboratory chemicals, Industrial & for professional use, Manufacture of substances.

**1.4 Company Identification:**

WEST BENGAL CHEMICAL INDUSTRIES LIMITED 145/1, Jessore Road, Lake Town, Kolkata – 700 089, India. Phone: +91 33 4025 1700 Fax: +91 33 2574 7410 Website: [www.wbcil.com](http://www.wbcil.com) Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com) Emergency Telephone No.: +91 9874356081.

## Section 2 – Hazards Identification

**2.1 Classification of the substance or mixture:**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

**2.2 Label elements:**

Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

2.2.1 Hazard classification

Skin Corrosion/Irritation Category 2

Serious Eye Damage/Eye Irritation Category 2

Specific target organ toxicity (single exposure) Category 3

Target Organs - Respiratory system.

**2.3 Signal Word:**

Warning

**2.4 Hazard statement(s):**

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H335 May cause respiratory irritation.

**2.5 Precautionary statement(s):**

**Prevention:**

- P260: Avoid inhalation of dust, fumes, gases, mist, vapors, or spray. Ensure proper ventilation and use engineering controls where necessary.





- P280: Wear appropriate protective gloves, protective clothing, eye protection, and face protection to minimize exposure.
- P264 + P265: Wash hands and exposed skin thoroughly after handling. Avoid contact with eyes and mouth.

**Response:**

- P301 + P310 + P330: If swallowed, immediately contact a **Poison Control Center** or a doctor/physician. Rinse mouth thoroughly with water. Do not induce vomiting unless instructed by medical personnel.
- P303 + P361 + P353: If on skin (or hair), immediately remove all contaminated clothing. Rinse affected areas thoroughly with water or take a shower.
- P304 + P340 + P310: If inhaled, move the person to fresh air and keep them in a position comfortable for breathing. Seek immediate medical attention by contacting a Poison Control Center or a doctor/physician.
- P305 + P351 + P338: In case of eye exposure, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do, then continue rinsing. Seek medical advice if irritation persists.
- P337 + P317: If eye irritation persists, seek medical attention and get appropriate treatment.

**Storage:**

- P403 + P233: Store in a well-ventilated place. Keep the container tightly closed to prevent leaks or contamination.

**2.6 Hazards not otherwise classified (HNOC):**

None identified

**2.7 Other hazards:**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**2.8 Pictogram:**





**2.9 NFPA Ratings:**



NFPA SCALE (0-4)

### Section 3 – Composition/ Information on Ingredients

**3.1 Ingredient Name:** Potassium Formate

**3.2 Synonyms:** Formic acid potassium salt

**3.3 CAS Number:** 590-29-4

**3.4 EC Number:** 209-677-9

**3.5 Molecular structure:** HCOOK

**3.6 Molecular formula:** 84.116 g/mol

### Section 4 - First Aid Measures

**4.1 Description of first aid measures:**

**4.1.1 General notes**

No special measures are necessary.

**4.1.2 Inhalation:** Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

**4.1.3 Skin:** Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse

**4.1.4 Eyes:** Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**4.1.5 Ingestion:** If victim is conscious and alert, give 2 - 4 cups of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately

**4.2 Most important symptoms and effects, both acute and delayed:**

**4.2.1 Symptoms/effects after inhalation**

Dust of the product, if present, may cause respiratory irritation after an excessive inhalation exposure. Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.

**4.2.2 Symptoms/effects after skin contact**





WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

None under normal conditions. Dust may cause irritation in skin folds or by contact in combination with tight clothing.

#### 4.2.3 Symptoms/effects after eye contact

None under normal conditions. Dust from this product may cause eye irritation.

#### 4.2.4 Symptoms/effects after ingestion

None under normal conditions.

#### 4.3 Indication of any immediate medical attention and special treatment needed:

No data available

## Section 5 - Fire-Fighting Measures

### 5.1 Extinguishing media:

#### 5.1.1 Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder, carbon dioxide (CO<sub>2</sub>).

#### 5.1.2 Unsuitable extinguishing media

water jet

### 5.2 Flash Point:

No information available

### 5.3 Autoignition Temperature:

No information available

### 5.4 Special hazards arising from the substance or mixture:

Non-combustible.

### 5.5 Hazardous combustion products:

In case of fire may be liberated: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

### 5.6 Special hazards arising from the substance or mixture:

Carbon oxides, Potassium oxides

### 5.7 Advice for firefighters:

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## Section 6 - Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures:

#### 6.1.1 For non-emergency personnel

No special measures are necessary.

### 6.2 Environmental precautions:





Keep away from drains, surface and ground water.

**6.3 Methods and material for containment and cleaning up:**

Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.3.1 Advice on how to contain a spill

Covering of drains. Take up mechanically.

6.3.2 Advice on how to clean up a spill

Take up mechanically.

6.3.3 Other information relating to spills and releases

Place in appropriate containers for disposal.

**6.4 Reference to other sections:**

Hazardous combustion products: see section 5.

Personal protective equipment: see section 8.

Incompatible materials: see section 10.

Disposal considerations: see section 13.

## Section 7 - Handling and Storage

**7.1 Precautions for safe handling:**

No special measures are necessary.

7.1.1 Advice on general occupational hygiene:

Keep away from food, drink and animal feeding stuffs.

**7.2 Storage:**

7.2.1 Conditions for safe storage, including any incompatibilities

Store in a dry place. Hygroscopic solid.

7.2.2 Incompatible substances or mixtures

Observe hints for combined storage, humidity

7.2.3 Specific designs for storage rooms or vessels

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

7.2.4 Recommended storage temperature: 15 – 25 °C

7.2.5 Storage Class (TRGS 510): Non-Combustible Solids.

## Section 8 - Exposure Controls / Personal Protection

**8.1 Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.



**8.1.1 Recommended monitoring procedures**

No additional information available

**8.1.2. Air contaminants formed**

No additional information available

**8.2 Human health values:****8.2.1 Relevant DNELs and other threshold levels**

Endpoint	Threshold Level	Protection Goal, Route of Exposure	Used In	Exposure Time
DNEL	43.5 mg/m <sup>3</sup>	Human, inhalatory	Worker (industry)	Acute - Systemic effects
DNEL	6.175 mg/kg bw/day	Human, dermal	Worker (industry)	Acute - Systemic effects
DNEL	43.55 mg/m <sup>3</sup>	Human, inhalatory	Worker (industry)	Chronic - Systemic effects
DNEL	12.35 mg/kg bw/day	Human, dermal	Worker (industry)	Chronic - Systemic effects

**8.3 Environmental values****8.3.1 Relevant PNECs and other threshold levels**

End-point	Threshold Level	Organism	Environmental Compartment	Exposure Time
PNEC	2 mg/l	Aquatic organisms	Freshwater	Short-term (single instance)
PNEC	0.2 mg/l	Aquatic organisms	Marine water	Short-term (single instance)
PNEC	0.79 mg/l	Aquatic organisms	Sewage treatment plant (STP)	Short-term (single instance)
PNEC	13.4 mg/kg	Aquatic organisms	Freshwater sediment	Short-term (single instance)

**8.4 Personal Protection:****8.4.1 Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

**8.4.2 Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.





**Full contact**

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374 If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**8.2.3 Respiratory protection**

Required when dusts are generated. Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system. Recommended Filter type: Filter type P1 The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**8.5 Exposure limits:**

Not available.

**Section 9 - Physical and Chemical Properties**

**9.1 Information on basic physical and chemical properties:**

<b>Physical state:</b>	Solid
<b>Appearance:</b>	Free flowing powder with occasional friable lumps
<b>Colour:</b>	White
<b>Odour:</b>	Pungent
<b>Melting point/freezing point:</b>	167 °C (ECHA)
<b>Boiling point or initial boiling point and boiling range:</b>	>167 °C
<b>Flammability:</b>	non-combustible
<b>Lower and upper explosion limit:</b>	not relevant (solid)
<b>Flash point:</b>	not applicable





## Section 9 - Physical and Chemical Properties

<b>Auto-ignition temperature:</b>	>400 °C at 1,013 hPa (ECHA)
<b>Decomposition temperature:</b>	167 °C (ECHA)
<b>pH H of 2% aqueous suspension:</b>	4.0-7.0
<b>Solubility</b>	Water solubility >1,000 g /l at 20 °C (ECHA)
<b>Partition coefficient n-octanol/water (log value):</b>	-1.999 (pH value: 6.4, 20 °C) (ECHA)
<b>Soil organic carbon/water (log KOC):</b>	1.49 (ECHA)
<b>Vapour pressure:</b>	Not determined
<b>Density and/or relative density:</b>	Density 1.91 g /cm <sup>3</sup> at 20 °C (ECHA)
<b>Dissociation Constant:</b>	3.79 ECHA
<b>Specific Gravity :</b>	1.9100
<b>Relative vapour density:</b>	Not relevant (solid)
<b>Particle characteristics:</b>	No data available.
<b>Oxidising properties:</b>	None
<b>9.2 Other information:</b>	
<b>Information with regard to physical hazard classes:</b>	
<b>hazard classes acc. to GHS (physical hazards):</b>	not relevant
<b>Other safety characteristics:</b>	Surface tension 72 mN/m (20 °C), (ECHA)

## Section 10 - Stability and Reactivity

### 10.1 Reactivity:

This material is not reactive under normal ambient conditions.

### 10.2 Chemical stability:

Moisture-sensitive. Hygroscopic solid.

### 10.3 Possibility of hazardous reactions:

No known hazardous reactions.

### 10.4 Conditions to avoid:

Keep away from heat. Decomposition takes place from temperatures above: 167 °C. Protect from moisture.

### 10.5 Incompatible materials:

Strong oxidizing agents, Strong acids

### 10.6 Hazardous decomposition products:

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Potassium oxides

10.6.1 Other decomposition products - No data available in the event of fire: see section 5

### 10.7 Hazardous Polymerization:

Has not been reported







## Section 11 - Toxicological Information

### 11.1 Information on toxicological effects

Classification acc. to GHS

This substance does not meet the criteria for classification.

### 11.2 Acute toxicity

Shall not be classified as acutely toxic.

#### 11.2.1 Toxicity to Animals:

LD50: Oral, Mouse: LD50 = 5500 mg/kg;

LC50: Not available.

#### 11.2.2 Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### 11.2.3 Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

#### 11.2.4 Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

#### 11.2.5 Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

#### 11.2.6 Carcinogenicity

Shall not be classified as carcinogenic.

### 11.3 Reproductive toxicity:

Shall not be classified as a reproductive toxicant.

### 11.4 Specific target organ toxicity - single exposure:

Shall not be classified as a specific target organ toxicant (single exposure).

### 11.5 Specific target organ toxicity - repeated exposure:

Shall not be classified as a specific target organ toxicant (repeated exposure).

### 11.6 Aspiration hazard:

Shall not be classified as presenting an aspiration hazard.

### 11.7 Other information:

Health effects are not known.

### 11.8 Endocrine disrupting properties:

Not listed.

### 11.9 Information on other hazards:

There is no additional information.

### 11.10 Human Health Values:

Relevant DNELs and other threshold levels:



**Section 11 - Toxicological Information**

Threshold Level	Protection Goal (Route of Exposure)	Used In	Exposure Time
435 mg/m <sup>3</sup>	Human, Inhalatory	Worker (Industry)	Acute – Systemic Effects
6175 mg/kg bw/day	Human, Dermal	Worker (Industry)	Acute – Systemic Effects
43.55 mg/m <sup>3</sup>	Human, Inhalatory	Worker (Industry)	Acute – Systemic Effects
12.35 mg/kg bw/day	Human, Dermal	Worker (Industry)	Acute – Systemic Effects

**Section 12 – Ecological Information****12.1 Aquatic toxicity (acute):**

Endpoint	Value	Species	Source	Exposure Time
LC50	>1,000 mg/l	Fish	ECHA	96 h
EC50	>1,000 mg/l	Aquatic Invertebrates	ECHA	48 h
ErC50	>1,000 mg/l	Algae	ECHA	72 h

**12.2 Acute toxicity (chronic):**

Endpoint	Value	Species	Source	Exposure Time
NOEC	>100 mg/l	Aquatic Invertebrates	ECHA	21 d
LOEC	>100 mg/l	Aquatic Invertebrates	ECHA	21 d

**12.3 Persistence and degradability:**

Theoretical Oxygen Demand: 0.0951 mg/mg

Theoretical Carbon Dioxide: 0.5232 mg/mg

**12.3.1 Biodegradation**

The substance is readily biodegradable.

**12.3.2 Process of degradability**

Process	Degradation rate	Time
Oxygen depletion	15 %	5d

**12.4 Bioaccumulative potential**

Does not significantly accumulate in organism

n-octanol/water (log KOW)	-2 (pH value: 6.4, 20°C) (ECHA)
---------------------------	---------------------------------

**12.5 Mobility in soil**

Henry's law constant	0.019 Pa·m <sup>3</sup> /mol at 25 °C	ECHA
The Organic Carbon normalized adsorption coefficient	1.49	ECHA

**12.6 Results of PBT and vPvB assessment:**



WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.7 Endocrine disrupting properties:**

Not listed.

**12.8 Other adverse effects:**

Data are not available.

## Section 13 – Disposal Considerations

**13.1 Waste treatment methods:**

Consult the appropriate local waste disposal expert about waste disposal.

**13.2 Sewage disposal-relevant information:**

Do not empty into drains.

**13.3 Relevant provisions relating to waste:**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

**13.4 Remarks:**

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## Section 14 – Transport Information

**14.1 UN number:**

not subject to transport regulations

**14.2 UN proper shipping name:**

not assigned

**14.3 Transport hazard class(es):**

not assigned

**14.4 Packing group:**

not assigned

**14.5 Environmental hazards:**

non-environmentally hazardous acc. to the dangerous goods regulations

**14.6 Special precautions for user:**

There is no additional information.

**14.7 Transport in bulk according to IMO instruments:**

The cargo is not intended to be carried in bulk.





WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

**14.8 Information for each of the UN Model Regulations:**

14.8.1 Transport information National Regulations Additional information (UN RTDG)

Not subject to transport regulations.

14.8.2 International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

14.8.3 International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

**14.9 D O T Classification:**

Not a DOT controlled material

**14.10 Identification:**

Not applicable.

**14.11 Special Provision for Transport:**

Not applicable

## Section 15 - Regulatory Information

**15.1 US Federal Regulations:**

**TSCA:** CAS# 590-29-4 is listed on the TSCA inventory.

**Health & Safety Reporting List:** None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules:** None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b:** None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule:** None of the chemicals in this material have a SNUR under TSCA.

**15.2 SARA:**

**CERCLA Hazardous Substances and corresponding RQs:** None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances:** None of the chemicals in this product have a TPQ.

**Section 313:** No chemicals are reportable under Section 313.

**15.3 Clean Air Act:**

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depleters. This material does not contain any Class 2 Ozone depleters.

**15.4 Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.





**15.5 OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**State Regulations:** CAS# 590-29-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**15.6 California No Significant Risk Level:**

None of the chemicals in this product are listed.

**Safety Phrases**

S 24/25 Avoid contact with skin and eyes.

S 37 Wear suitable gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 28A After contact with skin, wash immediately with plenty of water.

**15.7 WGK (Water Danger/Protection)**

CAS# 590-29-4: 1

**15.8 Regulatory Status**

This product is found on the following regulatory lists:

"Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service- Workplace Hazardous Materials Information System -WHMIS (English)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 18: List of products to which the Code does not apply", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US EPA High Production Volume . Chemicals Additional List" , "US Toxic Substances Control Act (TSCA) - Inventory".

**15.9 National regulations (Australia)**

**Australian Inventory of Chemical Substances(AICS)**

Substance is listed.

**15.10 Other information**

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

**15.11 National inventories**

Country	Inventory	Status
AU	AIIC	Substance is listed
CA	DSL	Substance is listed
CN	IECSC	Substance is listed
EU	ECSI	Substance is listed
EU	REACH Reg.	Substance is listed
JP	CSCL-ENCS	Substance is listed





KR	KECI	Substance is listed
NZ	NZIoC	Substance is listed
TR	CICR	Substance is listed
TW	TCSI	Substance is listed
US	TSCA	Substance is listed (ACTIVE)
VN	NCI	Substance is listed

**Legend**

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI EC	Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
KECI	Korea Existing Chemicals Inventory
NCI	National Chemical Inventory
NZIoC	New Zealand Inventory of Chemicals
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

**15.12 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out for this substance.

**Section 16 - Other Information****Full text of other abbreviations:**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code





WEST BENGAL CHEMICAL INDUSTRIES LIMITED

145/1, Jessore Road, Lake Town,

Kolkata – 700 089, India.

Phone: +9133 4025 1700 Fax: +9133 2574 7410

Email: [wbcil@wbcil.com](mailto:wbcil@wbcil.com)

Website: [www.wbcil.com](http://www.wbcil.com)

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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals 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

**Disclaimer:** This material safety data sheet is provided as an information resource only. WEST BENGAL CHEMICAL INDUSTRIES LIMITED believes the information contained herein is accurate and compiled from reliable sources. It is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state, and local regulations.

**Issue Date: January, 2025**

**Revision No.: 04**

**Revision Date: December, 2026**

