



# SAFETY DATA SHEET

THE DOW CHEMICAL COMPANY\*

**Product name:** KORDEK™ LX5000 Biocide

**Issue Date:** 04/06/2015

**Print Date:** 05/01/2015

THE DOW CHEMICAL COMPANY\* encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## 1. IDENTIFICATION

**Product name:** KORDEK™ LX5000 Biocide

### **Recommended use of the chemical and restrictions on use**

**Identified uses:** Biocidal product

### **COMPANY IDENTIFICATION**

THE DOW CHEMICAL COMPANY\*  
Agent for Rohm and Haas Chemicals LLC  
100 INDEPENDENCE MALL WEST  
PHILADELPHIA PA 19106-2399  
UNITED STATES

**Customer Information Number:**

215-592-3000

[SDSQuestion@dow.com](mailto:SDSQuestion@dow.com)

### **EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 1 800 424 9300

**Local Emergency Contact:** 800-424-9300

## 2. HAZARDS IDENTIFICATION

### **Hazard classification**

This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

Acute toxicity - Category 4 - Oral

Acute toxicity - Category 3 - Dermal

Skin corrosion - Category 1

Serious eye damage - Category 1

Skin sensitisation - Category 1

Specific target organ toxicity - single exposure - Category 3

### **Label elements**

### **Hazard pictograms**



Signal word: **DANGER!**

#### **Hazards**

Harmful if swallowed.  
Toxic in contact with skin.  
Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.  
May cause respiratory irritation.

#### **Precautionary statements**

##### **Prevention**

Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing should not be allowed out of the workplace.  
Wear protective gloves/ protective clothing/ eye protection/ face protection.

##### **Response**

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.  
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.  
If skin irritation or rash occurs: Get medical advice/ attention.  
Wash contaminated clothing before reuse.

##### **Storage**

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

##### **Disposal**

Dispose of contents/ container to an approved waste disposal plant.

#### **Other hazards**

no data available

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### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

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**Chemical nature:** Organic Mixture Aqueous

This product is a mixture.

<b>Component</b>	<b>CASRN</b>	<b>Concentration</b>
2-Methyl-4-isothiazolin-3-one	2682-20-4	>= 50.0 - 52.0 %
Water	7732-18-5	>= 46.0 - 48.0 %
Related reaction products	Not Required	<= 2.0 %

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#### 4. FIRST AID MEASURES

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##### Description of first aid measures

**Inhalation:** Move to fresh air. Give artificial respiration if breathing has stopped. If symptoms persist, call a physician.

**Skin contact:** IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash off with soap and water. Immediate medical attention is required. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Discard contaminated shoes, belts, and other articles made of leather.

**Eye contact:** Rinse immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

**Ingestion:** Drink 1 or 2 glasses of water. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** MATERIAL IS CORROSIVE. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock and convulsions maybe necessary.

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#### 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable extinguishing media:** no data available

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

**Hazardous combustion products:** no data available

**Unusual Fire and Explosion Hazards:** Combustion generates toxic fumes of the following: Nitrogen oxides (NOx) sulfur oxides

**Advice for firefighters**

**Fire Fighting Procedures:** Cool containers/tanks with water spray. Minimize exposure. Do not breathe fumes. Contain run-off.

**Special protective equipment for firefighters:** Wear self-contained breathing apparatus and protective suit.

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## 6. ACCIDENTAL RELEASE MEASURES

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**Personal precautions, protective equipment and emergency procedures:** Wear a NIOSH approved (or equivalent) respirator (with organic vapor/acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material. MATERIAL IS CORROSIVE. Protective clothing, including chemical splash goggles, nitrile or butyl rubber full length gloves, rubber apron, or clothing made of nitrile or butyl rubber, and rubber overshoes must be worn during spill clean-ups and deactivation of this material. If material comes in contact with the skin during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

**Environmental precautions:** Do not allow material to contaminate ground water system. Prevent product from entering drains.

**Methods and materials for containment and cleaning up:** WARNING: KEEP SPILLS AND CLEAN-UP RESIDUALS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush the spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material. See Section 13, "Disposal Considerations", for information regarding the disposal of contained materials.

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## 7. HANDLING AND STORAGE

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**Precautions for safe handling:** This material is a severe irritant. For personal protection see section 8. Do not handle material near food, feed or drinking water.

**Conditions for safe storage:** Keep in a well-ventilated place. Do not store this material near food, feed or drinking water.

CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after container is emptied. Expiration date based only on retention of >95% actives during storage at 20°C-25°C (68°F-77°F).

**Storage stability**

**Storage temperature:** 1 - 55 °C (34 - 131 °F)

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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**Control parameters**

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
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2-Methyl-4-isothiazolin-3-one	Rohm and Haas	TWA	1.5 mg/m <sup>3</sup>
	Rohm and Haas	STEL	4.5 mg/m <sup>3</sup>

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

**Protective measures:** Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

**Individual protection measures**

**Eye/face protection:** Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

**Skin protection**

**Hand protection:** Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): Butyl-rubber. Nitrile rubber. PVC gloves >1 mm thickness. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. NOTE: Material is a possible skin sensitizer.

**Other protection:** Wear as appropriate: Chemical resistant apron complete suit protecting against chemicals

**Respiratory protection:** Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. For concentrations up to 10 times the exposure limit, wear a properly fitted NIOSH approved (or equivalent) half-mask or full facepiece air purifying respirator equipped with organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters. For those unlikely situations where exposure may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode or a full facepiece airline respirator in the pressure demand mode with emergency escape provision. See SECTION 6, Accidental Release Measures, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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**Appearance**

<b>Physical state</b>	liquid
<b>Color</b>	Colorless to brown clear
<b>Odor</b>	no data available
<b>Odor Threshold</b>	no data available
<b>pH</b>	3.0 - 7.0
<b>Melting point/range</b>	no data available

Freezing point	no data available
Boiling point (760 mmHg)	100.00 °C ( 212.00 °F)
Flash point	no data available
Evaporation Rate (Butyl Acetate = 1)	no data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapor Pressure	no data available
Relative Vapor Density (air = 1)	no data available
Relative Density (water = 1)	1.2000 at 20.00 °C (68.00 °F)
Water solubility	completely soluble
Partition coefficient: n-octanol/water	log Pow: -0.486 <i>Method Not Specified.</i>
Auto-ignition temperature	no data available
Decomposition temperature	no data available
Dynamic Viscosity	no data available
Kinematic Viscosity	no data available
Explosive properties	no data available
Oxidizing properties	no data available
Molecular weight	149.50 g/mol

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** no data available

**Chemical stability:** no data available

**Possibility of hazardous reactions:** Stable under recommended storage conditions. Product will not undergo polymerization.

**Conditions to avoid:** no data available

**Incompatible materials:** Avoid contact with the following: Oxidizing agents Amines. Reducing agents. Mercaptans.

**Hazardous decomposition products:** Nitrogen oxides (NOx) Sulphur oxides hydrogen chloride

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information on this product or its components appear in this section when such data is available.*

### **Acute toxicity**

#### **Acute oral toxicity**

LD50, Rat, 391 mg/kg

#### **Acute dermal toxicity**

LD50, Rabbit, female, 326 mg/kg

LD50, Rabbit, male, 435 mg/kg

#### **Acute inhalation toxicity**

Product test data not available.

### **Skin corrosion/irritation**

Causes burns.

### **Serious eye damage/eye irritation**

Corrosive

### **Sensitization**

Causes sensitisation.

### **Specific Target Organ Systemic Toxicity (Single Exposure)**

Product test data not available.

### **Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Product test data not available.

### **Carcinogenicity**

Product test data not available.

### **Teratogenicity**

Product test data not available.

### **Reproductive toxicity**

Product test data not available.

### **Mutagenicity**

Product test data not available.

### **Aspiration Hazard**

Product test data not available.

## **COMPONENTS INFLUENCING TOXICOLOGY:**

### **2-Methyl-4-isothiazolin-3-one**

**Acute inhalation toxicity**

The LC50 has not been determined.,

**Specific Target Organ Systemic Toxicity (Single Exposure)**

May cause respiratory irritation.

Route of Exposure: Inhalation

Target Organs: Respiratory Tract

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

**Carcinogenicity**

Did not cause cancer in laboratory animals.

**Teratogenicity**

Did not cause birth defects in laboratory animals.

**Reproductive toxicity**

In animal studies, did not interfere with reproduction.

**Mutagenicity**

Negative in genetic toxicity tests.

**Aspiration Hazard**

Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

**Related reaction products**

**Acute inhalation toxicity**

The LC50 has not been determined.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

No relevant data found.

**Carcinogenicity**

No relevant data found.

**Teratogenicity**

No relevant data found.

**Reproductive toxicity**

No relevant data found.

**Mutagenicity**

No relevant data found.

**Aspiration Hazard**

Based on available information, aspiration hazard could not be determined.

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**12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information on this product or its components appear in this section when such data is available.*

**Toxicity**

**2-Methyl-4-isothiazolin-3-one**

**Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, 4.77 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), 48 Hour, 0.93 - 1.9 mg/l

**Acute toxicity to algae/aquatic plants**

EC50, Algae (Selenastrum capricornutum), 72 Hour, Growth rate, 0.158 mg/l, OECD Test Guideline 201

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna, 21 d, 0.04 mg/l

**Related reaction products**

**Acute toxicity to fish**

No relevant data found.

**Persistence and degradability**

**2-Methyl-4-isothiazolin-3-one**

**Biodegradability:** Material is expected to be readily biodegradable.

**Biodegradation:** 98 %

**Exposure time:** 48 d

**Method:** Simulation study

**Related reaction products**

**Biodegradability:** No relevant data found.

**Bioaccumulative potential**

**Partition coefficient: n-octanol/water(log Pow):** -0.486 at 24 °C Method Not Specified.

**Mobility in soil**

**2-Methyl-4-isothiazolin-3-one**

No relevant data found.

**Related reaction products**

No relevant data found.

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations. (See 40 CFR 268)

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### 14. TRANSPORT INFORMATION

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#### DOT

<b>Proper shipping name</b>	Corrosive liquids, toxic, n.o.s.(2-Methyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 2922
<b>Class</b>	8 (6.1)
<b>Packing group</b>	II

#### Classification for SEA transport (IMO-IMDG):

<b>Proper shipping name</b>	CORROSIVE LIQUID, TOXIC, N.O.S.(2-Methyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 2922
<b>Class</b>	8 (6.1)
<b>Packing group</b>	II
<b>Marine pollutant</b>	2-Methyl-4-isothiazolin-3-one
<b>Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code</b>	Consult IMO regulations before transporting ocean bulk

#### Classification for AIR transport (IATA/ICAO):

<b>Proper shipping name</b>	Corrosive liquid, toxic, n.o.s.(2-Methyl-4-isothiazolin-3-one)
<b>UN number</b>	UN 2922
<b>Class</b>	8 (6.1)
<b>Packing group</b>	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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### 15. REGULATORY INFORMATION

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#### OSHA Hazard Communication Standard

This product is considered hazardous under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**  
Acute Health Hazard

**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**

This product does not contain a chemical which is listed in Section 313 at or above de minimis concentrations.

**United States TSCA Inventory (TSCA)**

This product contains chemical substance(s) exempt from U.S. EPA TSCA Inventory requirements. It is regulated as a pesticide subject to Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) requirements.

**Federal Insecticide, Fungicide and Rodenticide Act**

EPA Registration Number: 707-256

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive

Causes irreversible eye damage and skin burns

May cause allergic skin reaction

**MAY BE FATAL IF SWALLOWED, INHALED OR ABSORBED THROUGH THE SKIN**

This product is toxic to fish and wildlife.

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**16. OTHER INFORMATION**

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**Hazard Rating System**

**HMIS**

Health	Flammability	Physical Hazard
3	0	0

**Revision**

Identification Number: 101125168 / 1001 / Issue Date: 04/06/2015 / Version: 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Rohm and Haas	Rohm and Haas OEL's
STEL	Short Term Exposure Limit (STEL):
TWA	Time Weighted Average (TWA):

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY\* urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.