



# SAFETY DATA SHEET

Revision date: 9/08/2015

GHS HCS-2012 1910.1200

## LINKWELL MBTS

*Read the entire SDS for a complete hazard assessment.*

### Section 1. Product and Company Identification

#### 1.1 Product Identifiers:

**Product Name:** LINKWELL MBTS

**Synonyms:** Mercapto benzo thiazole disulfide, Benzothiazyl disulfide, Dibenzothiazole disulphide

**Molecular Weight:** Not available

**Chemical Name:** Benzothiazole, 2,2'-dithiobis

**1.2 Recommended use:** Used as rubber accelerant.

**Restrictions on use:** Commercial formulation use only.

#### 1.3 Manufacturer and Supplier:

##### Manufacturer

LINKWELL RUBBER CHEMICALS (QINGDAO) CO., LTD  
ROOM 600-602, TIMES SQUARE, 52 HONGKONG  
MIDDLE ROAD QINGDAO 266071, CHINA

E-mail: [market@rubberchem.com](mailto:market@rubberchem.com)

Telephone: +86 532 85786843

Fax: +86 532 85786840

##### Distributor

R.E. Carroll, Inc.  
North Olden Avenue  
Trenton, NJ 08638 USA  
SDS Contact: John Boruta  
[johnb@recarroll.com](mailto:johnb@recarroll.com)  
609-695-6211  
609-695-0102

#### 1.4 Emergency telephone number:

In China +86 532 85786843

In the US: For a transport accident or leak, fire or major spill, call CHEMTREC, (800) 424-9300.

For International: CHEMTREC assistance, call 1-703-527-3887 (collect calls accepted).

### Section 2. Hazards Identification

#### 2.1 Hazard Classification:

##### Globally Harmonized System (GHS) Hazard Classification:

This SDS meets the requirements of GHS Revision 3, HCS 2012 (29 CFR 1910.1200)

OSHA Classification in accordance with 29 CFR 1910 (OSHA HCS): hazardous.

**OSHA defined hazard**      **Combustible dust**

##### GHS Classification

**Physical Hazards**      **Not GHS classified as a physical hazard**

##### Health hazards

Skin sensitization      Category 1

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### Environmental hazards

Hazardous to the aquatic environment Acute Category 1  
Hazardous to the aquatic environment Chronic Category 1

### 2.2 Label elements

**Contains:** Benzothiazole, 2,2'-dithiobis

Hazard pictograms



**Signal word**

Warning

### Hazard statements

May form combustible concentrations in air

H317 - May cause an allergic skin reaction

H400: Very toxic to aquatic life

H410: Very toxic to aquatic life with long lasting effects

### Precautionary statements

#### Prevention

P261 - Avoid breathing dust /vapors/spray.

P280 - Wear protective gloves/protective clothing/eye protection/ face protection.

P240 - Ground/bond container and receiving equipment.

P241 - Use explosion-proof electrical/ventilating/lighting/.../equipment.

P242 - Use only non-sparking tools.

P243 - Take precautionary measures against static discharge.

P210 - Keep away from heat/sparks/open flames/hot surfaces - No smoking.

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.

P333+313: If skin irritation or rash occurs: Get medical advice/attention.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 - Immediately call a POISON CENTRE or doctor/physician.

P363: Wash contaminated clothing before reuse.

P391: Collect spillage.

#### Storage

P233 - Keep container tightly closed



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### Disposal

P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazards not otherwise classified (HNOC):** Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose, and throat. Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. **Slipping Hazard**

### Additional information

EUH031 Contact with acids liberates toxic gas.

### Section 3. Composition/Information on Ingredients

Component	CAS RN	EINECS No.	Concentration (% by weight)
di(benzothiazol-2-yl) disulphide	120-78-5	204-424-9	100

Additional information: For more information please contact our company.

### Section 4. First-Aid Measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### 4.1 Inhalation:

Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and continue to monitor. Seek immediate medical attention.

#### 4.2 Skin contact:

Wash skin with plenty of soap and water while removing contaminated clothing. If symptoms persist, seek medical attention. Wash contaminated clothing before use.

#### 4.3 Eye contact:

Immediately flush eyes thoroughly with water for several minutes. Remove contact lenses after one to two minutes and continue flushing for several more minutes. If redness, itching or burning sensation develops, seek medical attention.

#### 4.4 Ingestion:

DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Gently wipe or rinse the inside of the mouth with water. Sips of water can be given. If symptoms persist, contact a poison control center, emergency room, or physician for treatment information.

#### 4.5 Relevant routes of exposure: Eye, skin, inhalation.

#### 4.6 Most important symptoms or effects, both acute or delayed: May cause an allergic skin reaction.

#### 4.7 Recommendations for immediate medical care, special treatment and notes for physicians:



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Persons with pre-existing skin, eye, or respiratory conditions may be at an increased risk from the irritant properties of this material. Attending physician should treat exposed patients symptomatically.

### Section 5. Fire-Fighting Measures

**General Advice:** This product is combustible in contact with ignition source. Airborne dust can form explosive mixture with air. Static of empty packages may produce fire flash, keep away from flammable vapor.

#### 5.1 Extinguishing media:

**Suitable extinguishing media:** Dry chemical, CO<sub>2</sub>, sand, earth, water spray or regular foam. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires.

**Unsuitable extinguishing media** Forceful application of fire extinguishing agents or water spray may spread burning material.

#### 5.2 Special hazards arising from the chemical:

**Unusual fire and explosion hazards:** Contact with acids liberates toxic gas. Contact with open flame is combustible. Thermal decomposition can lead to release of irritating and toxic gases and vapors. Do not permit dust to accumulate. When suspended in air, dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated temperatures, spontaneous combustions may occur. Dense smoke is emitted when burned without sufficient oxygen.

**Hazardous Combustion Products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition, which may be toxic and/or irritating including oxides of carbon, nitrogen and sulfur.

#### 5.3 Special protective equipment and precautions for firefighters:

**Fire Fighting Procedures:** Keep personnel away. Isolate fire and deny unnecessary entry. Do not apply direct water stream. Use fine water spray or foam. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents. Prevent, by any means available, spillage from entering drains or water courses.

**Special Protective Equipment for Firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

### Section 6. Accidental Release Measures

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

Ensure adequate ventilation, especially in confined areas. Remove all sources of ignition. Use personal protective equipment. Avoid breathing vapors, mist, or gas. Avoid skin and eye contact. Evacuate personnel to safe areas. Spilled material may cause a slipping hazard. Use appropriate safety equipment. See Section 8 for information on personal protection equipment.



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### 6.2 Environmental precautions and protective procedures:

Prevent further leakage or spillage if safe to do so. Do not let product enter drains, sewers, waterways, and/or groundwater.

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

Contain spilled material if possible. Sweep up using non-sparking tools. Keep moist. Dust should not be allowed to accumulate on surfaces as these may form an explosive mixture if they are released into the atmosphere in sufficient concentrations. Avoid dispersal of dusts in the air (i.e., cleaning dust services with compressed air). Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

## Section 7. Handling and Storage

### 7.1 Precautions for safe handling:

No smoking, open flames or sources of ignition in handling and storage area. Good housekeeping and controlling of dusts are necessary for safe handling of product. When transferring material, use proper grounding to avoid electrical sparks.

Avoid breathing dusts, process fumes. Use with adequate ventilation. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink and/or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

### 7.2 Conditions for safe storage (including any incompatibilities):

Store in cool place. Avoid heat and ignition sources. Do not store together with acids or oxidizing agents. Keep container tightly closed in a dry and well-ventilated place. Store in accordance with good manufacturing practices.

## Section 8. Exposure Controls and Personal Protection

Consult with a Health and Safety Professional for specific selections.

### 8.1 Control parameter:

Occupational exposure limits

At this time no PEL/TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

Permissible Exposure Limit(PEL): Table Z-1 8-Hr Time Weighted Avg. (TWA) for Dusts

OSHA PEL: TWA 15mg/m <sup>3</sup> (Total Dust),	TWA 5mg/m <sup>3</sup> (Respirable Fraction)
ACGIH : TWA 10 mg/m <sup>3</sup> (Inhalable particles)	TWA 3 mg/m <sup>3</sup> (Respirable Particles)
NIOSH REL: TWA 10mg/m <sup>3</sup> (Total Dust),	TWA 5mg/m <sup>3</sup> (Respirable Fraction)



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### 8.2 Appropriate engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. It is recommended that all dust control equipment contain explosion relief vents or an explosion suppression system or an oxygen deficient environment. Ensure that dust handling equipment be designed to prevent the escape of dusts into the work area. Refer to NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids*, for safe handling.

### 8.3 Personal protective equipment:

#### Eye protection:

Use safety glasses. If there is a potential for exposure to mists which could cause eye discomfort, wear chemical goggles, or use a full-face respirator.

#### Body protection:

Wear clean body-covering clothing to prevent skin exposure.

#### Hand protection:

Contact should be minimized. Protective gloves and clothing are recommended

#### Respiratory protection:

Concentration in air determines the level of respiratory protection needed. Use only NIOSH certified respiratory equipment. Half-mask air purifying respirator with dust mist filters or HEPA filter cartridges is acceptable for exposures to ten (10) times the exposure limit. Full-face air purifying respirator with dust mist filters or HEPA filter cartridges is acceptable for exposures to fifty (50) times the exposure limit. Protection by air purifying respirators is limited. Use a positive pressure-demand full-face supplied air respirator or SCBA for exposures greater than fifty (50) times the exposure limit. If exposure is above the IDLH (Immediately Dangerous to Life and Health), or there is the possibility of an uncontrolled release, or exposure levels are unknown, then use a positive pressure-demand full-face supplied air respirator with escape bottle or SCBA. Wear a NIOSH-approved (or equivalent) full-face piece airline respirator in the positive pressure mode with emergency escape provisions.

#### Other:

Remove contaminated clothing and wash before reuse. For non-fire emergencies, respiratory protection may be necessary and wear appropriate protective clothing to avoid contact with material. Have eyewash station, safety showers, and water supply in work area.

Do not consume or store food in the work area. Wash hands before smoking or eating.

## Section 9. Physical and Chemical Properties

**Appearance** Solid

**Color** Pale yellow

**Odor** No available

**Odor Threshold** Not determined

**pH** Not determined

**Melting point/freezing point** 164-179°C

**Boiling point / boiling range** Not determined

**Flash point** Not applicable

**Evaporation rate** Not determined

**Flammability (solid, gas)** Not determined

**Flammability Limit in Air** Not determined



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**Vapor Pressure** 0.00000000135 hPa at 25 °C

**Vapor density** Not determined

**Density** 1.5 g/cm<sup>3</sup> at 19 °C

**Relative density** Not determined

**Bulk density** Not determined

**Specific gravity** Not determined

**Water solubility** >= 0.27, <= 0.37 at 25 °C

**Partition coefficient (Log Pow)** 4.5

**Autoignition temperature** Not determined

**Decomposition temperature** Not determined

**Kinematic viscosity** Not determined

**Dynamic viscosity** Not determined

**Explosive properties** Not an explosive

**Oxidizing properties** Not determined

### Section 10. Stability and Reactivity

**10.1 Chemical stability:** Stable under normal temperature conditions and recommended use.

**10.2 Possibility of hazardous reactions:** Contact with acids liberates toxic gas.

**10.3 Conditions to avoid:** Strong heating, sparks, open flames.

**10.4 Incompatible materials:** Strong oxidizing agents, strong acids.

**10.5 Hazardous decomposition products:**

Decomposition products depend upon temperature, air supply and the presence of other materials. Processing may release fumes and other decomposition products. Fumes can be irritating.

**10.6 Hazardous Polymerization:** Will not polymerize.

### Section 11. Toxicological Information

**11.1 Information on the likely routes of exposure:** Inhalation, ingestion, skin and eye contact.

**11.2 Information on toxicological effects:**

Acute toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

Oral LD50: > 12 g/kg - Rat

Inhalation 4 h LC50: > No data

Dermal LD50: > 7940 mg/kg - Rabbit

Skin corrosion/irritation:

No skin irritation

Classification: Not classified as irritant

Serious eye damage/irritation:

Slight or no eye irritation

Classification: Not classified as irritant



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Inhalation: May cause respiratory tract irritation.  
Classification: Not classified as irritant

Respiratory sensitization: None known  
Classification: Does not cause respiratory sensitization

Skin sensitization: Cause sensitization on laboratory animals, mouse  
Classification: Causes skin sensitization

Ingestion: Classification: Not classified as irritant

### Repeated dose toxicity

Inhalation: No toxicologically significant effects were found.

Mutagenicity: Negative results in the Ames Test

Reproductive Toxicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

### Specific target organ toxicity (STOT):

STOT-single exposure: Not known.

STOT-repeated exposure: Not known.

Aspiration Hazard: Not known.

**Chronic effects** Prolonged inhalation may be harmful.

### Symptoms related to the physical, chemical, and toxicological characteristics

Adverse symptoms may include the following

Eye contact: pain or irritation, watering, redness

Inhalation: cough, sore throat

Skin contact: irritation, redness.

**11.3 Carcinogenicity:** Not considered a carcinogen by IARC, NTP, and OSHA ACGIH.

## Section 12. Ecological Information

### 12.1 Ecotoxicity

Acute daphnia toxicity: EC<sub>50</sub>=211 mg/L/48 h (Daphnia magna)

Acute algae/Aquatic plants toxicity: EC<sub>50</sub> 0.3: 96 h *Pseudokirchneriella subcapitata* mg/L EC<sub>50</sub>

Fish LC<sub>50</sub> 0.3: 96 h *Lepomis macrochirus* mg/L LC<sub>50</sub> static 0.3: 96 h *Oncorhynchus mykiss* mg/L

LC<sub>50</sub> static 0.3: 96 h *Pimephales promelas* mg/L LC<sub>50</sub> static

**Very toxic to aquatic life with long lasting effects**

**12.2 Mobility:** No information available.

**12.3 Persistence and degradability:** Not readily biodegradable.

### 12.4 Bioaccumulative potential: low Partition coefficient (Log Pow) 4.67

Partition coefficient n-octanol /water (log value) : 4.5 at pH 7

Bioconcentration factor (BCF): 1.4-51





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### 12.5 Additional ecological information

Avoid transfer into the environment.

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment cannot be excluded.

## Section 13. Disposal Considerations

### 13.1 Disposal methods:

Uncontaminated discarded product is not a hazardous waste under RCRA. Do not dump into any sewers, on the ground or into any body of water. All disposal practices must comply with all federal, state, and local laws and regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this

### 13.2 Container disposal:

Empty container retains product residue. Observe all hazard precautions. Do not distribute, make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue. Puncture or otherwise destroy empty container and dispose of in a facility permitted for nonhazardous waste.

## Section 14. Transport Information

### DOT Classification:

14.1 UN number: 3077

14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S.(di(benzothiazol-2-yl) disulphide)

14.3 Transport hazard class: 9.

14.4 Packing group (if applicable): III

14.5 ADR/RID: Same as DOT

14.6 RID: Same as DOT.

14.7 IATA/IMDG: Same as DOT.

14.8 Marine Pollutant (Yes/No): Yes



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### Section 15. Regulatory Information

#### U.S. Regulations

**15.1 US EPA TSCA Inventory:** All chemical substances in the products comply with all rules or orders under TSCA. All intentionally added ingredients either are listed on the TSCA Inventory list or exempt from listing.

#### 15.2 SARA Section 311/312 Hazard Categories

Acute Hazard: Yes

Chronic Hazard: Yes

Fire Hazard: Yes

Reactive Hazard: No

Sudden Pressure Release: No

#### 15.3 CERCLA Hazardous Substance SARA Section 304 Release Reporting:

Component(s)

Reportable Quantity

None

#### 15.4 SARA Section 302 Extremely Hazardous Substances:

Component(s)/

CAS Number

None

Concentration

Min Max

#### 15.5 SARA Section 313 Toxic Chemicals:

Component(s)/

CAS Number

None

Reporting

Threshold

Concentration

Min Max

**15.6 California Proposition 65:** This product is not known to contain chemical(s) known to the State of California to cause cancer or reproductive harm.

**15.7 Pennsylvania Worker and Community Right To Know Act:** Hazardous Substances: none

**15.8 New Jersey Worker and Community Right To Know Act:** Hazardous Substances: none

#### 15.9 International Regulations:

Canadian Regulations:

WHMIS Statement: This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the SDS contains all the information required by the *Controlled Products Regulations*. This product is classified as controlled in accordance with the Canadian Controlled Products Regulations

This product complies with RoHS (Restriction on Hazardous Substances).

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German Hazard Class for water:3.

### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed

### Section 16. Other Information

#### 16.1 NFPA® and HMIS® Hazard Ratings:

We assigned NFPA® and HMIS® ratings to this product based on the hazards of its ingredient(s). Because the customer is most aware of the application of the product, the customer must ensure that the proper personal protective equipment (PPE) is provided consistent with information contained in the product SDS. This information is intended solely for the use of individuals trained in the particular hazard rating system.

Key: 0 = least, 1 = slight, 2 = moderate, 3 = high, 4 = extreme

#### NFPA® (National Fire Protection Association) - Classification



Health	2 moderate
Flammability	1 minimal
Instability or Reactivity	0 minimal

#### HMIS® [Hazardous Materials Identification System (Paint & Coating)] - Classification

Health	2*
Flammability	1
Physical hazard	0s



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Health	2 moderate* Chronic
Flammability	1 minimal
Reactivity	0 minimal

The NFPA®, HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this SDS must be considered. This information is supplied solely for the use of individuals trained in the particular hazard rating system.

### 16.2 Revision information:

Date of the previous revision: 05/08/2015 (Version 1)

Date of this revision: 09/08/2015 (Version 2.0)

Revision summary: Revised GHS/OSHA compliant SDS

**16.3 Training advice:** Provide adequate information, instruction and training for operators.

### 16.4 Key or legend to abbreviations and acronyms used in the safety data sheet:

ACGIH	American Conference of Governmental Industrial Hygienists
BEI	Biological Exposure Index
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
ppm	parts per million
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
Action Level	An exposure value set by OSHA that is lower than the PEL that will trigger the need for activities such as exposure monitoring and medical surveillance.

**16.5 Declare to reader:** The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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**END OF SDS**

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