

LTS RESEARCH LABORATORIES, INC.
MATERIAL SAFETY DATA SHEET
COBALT OXIDE

GENERAL

MANUFACTURER/SUPPLIER: LTS RESEARCH LABORATORIES, INC.
COMPANY'S STREET: 37 RAMLAND ROAD
COMPANY'S CITY: ORANGEBURG
COMPANY'S STATE: NEW YORK
COMPANY'S ZIP CODE: 10962
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DATE MSDS PREPARED: 07/19/10

1. PRODUCT IDENTIFICATION

PRODUCT NAME: COBALT OXIDE
FORMULA: Co_3O_4 , CoO
CAS #: 1308-06-1, 1307-96-6

2. PHYSICAL AND CHEMICAL CHARACTERISTICS

BOILING POINT: N/A
MELTING POINT: 900°C
SPECIFIC GRAVITY ($\text{H}_2\text{O}=1$): 6.11
VAPOR DENSITY: N/A
VAPOR PRESSURE: N/A
EVAPORATION RATE: N/A
% VOLATILES: N/A
SOLUBILITY IN H_2O : N/A
APPEARANCE AND ODOR: BLACK POWDER, ODORLESS



3. HAZARD IDENTIFICATION

HAZARD DESCRIPTION: Xn HARMFUL
N DANGEROUS FOR THE ENVIRONMENT
RISK PHRASES: R40 LIMITED EVIDENCE OF A CARCINOGENIC EFFECT
R43 MAY CAUSE SENSITIZATION BY SKIN CONTACT
R50/53 VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE
LONG-TERM ADVERSE EFFECTS IN THE AQUATIC
ENVIRONMENT
HMIS RATINGS:
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 0

4. FIRE FIGHTING MEASURES

FLASH POINT: N/A
AUTOIGNITION TEMPERATURE: N/A
FLAMMABLE LIMITS:
UPPER: N/A
LOWER: N/A
EXTINGUISHING MEDIA: PRODUCT IS NOT FLAMMABLE. USE FIREFIGHTING
MEASURES THAT SUIT THE SURROUNDING FIRE.
SPECIAL HAZARDS: IN CASE OF FIRE, TOXIC METAL OXIDE FUMES MAY BE
RELEASED

5. HEALTH HAZARD INFORMATION

ACUTE EFFECTS:

SKIN: MAY CAUSE IRRITATION

EYE: MAY CAUSE IRRITATION

SENSITIZATION: POSSIBLE THROUGH SKIN CONTACT

CHRONIC EFFECTS:

COBALT IS AN EXPERIMENTAL NEOPLASTIGEN AND TUMORIGEN. IT IS AN EXPERIMENTAL CARCINOGEN OF THE CONNECTIVE TISSUE AND LUNGS. COBALT METAL AND INORGANIC COMPOUNDS ARE CLASSIFIED AS AN ANIMAL CARCINOGEN BY THE ACGIH. INGESTION MAY CAUSE BURNING IN THE MOUTH, ESOPHAGUS, AND STOMACH. INHAALATION OF DUSTS AND FUMES MAY CAUSE IRRITATION OF THE RESPIRATORY TRACT AND LABORED BREATHING AND COUGHING. SENSITIZATION, NAUSEA, FLUSHING OF THE FACE AND RINGING IN THE EARS IS ALSO POSSIBLE. CHRONIC INGESTION MAY RESULT IN PERICARDIAL EFFUSION, POLYCARDIAL EFFUSION, POLYCYTHEMIA, CARDIA FAILURE, VOMITING, CONVULSIONS, AND THYROID ENLARGEMENT.

6. STABILITY

STABILITY: STABLE

CONDITIONS TO AVOID: NONE

MATERIAL TO AVOID: ACIDS

DANGEROUS REACTIONS: NONE KNOWN

HAZARDOUS

DECOMPOSITION PRODUCTS: TOXIC METAL OXIDE FUME

7. EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: REMOVE TO FRESH AIR AND PROVIDE ARTIFICIAL RESPIRATION IF NECESSARY. SEEK IMMEDIATE MEDICAL ADVICE.

INGESTION: SEEK IMMEDIATE MEDICAL ATTENTION.

SKIN: WASH SKIN THOROUGHLY WITH MILD SOAP AND WATER. RINSE THOROUGHLY. SEEK IMMEDIATE MEDICAL ADVICE.

EYE: FLUSH EYES WITH PLENTY OF WATER. SEEK IMMEDIATE MEDICAL ADVICE.

8. HANDLING AND STORAGE

HANDLING & STORAGE: STORE IN A COOL, DRY PLACE IN TIGHTLY SEALED CONTAINERS. ENSURE GOOD VENTILATION. NO SPECIAL REQUIREMENTS ARE NECESSARY IF USED CORRECTLY.

9. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

RESPIRATION: WEAR NIOSH APPROVED DUST-MIST VAPOR RESPIRATOR.
VENTILATION: LOCAL EXHAUST TO MAINTAIN CONCENTRATION AT OR BELOW THE PEL, TLV.

PROTECTIVE GLOVES: RUBBER GLOVES.

EYE PROTECTION: SAFETY GLASSES

PROTECTIVE CLOTHING: PROTECTIVE GEAR SUITABLE TO PREVENT CONTAMINATION.

WASTE DISPOSAL METHOD: DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

10. TOXICITY DATA

LD/LC50 VALUES: ORAL LD50 >5000 mg/kg (RAT)
THE REGISTRY OF TOXIC EFFECTS OF
CHEMICAL SUBSTANCES REPOSRTS
THE FOLLOWING EFFECTS IN
LABORATORY ANIMALS: NUTRITIONAL AND GROSS METABOLIC – WEIGHT LOSS OR
DECREASED WEIGHT GAIN
CARCINOGENICITY: IARC-2B: POSSIBLY CARCINOGENIC TO HUMANS – LIMITED
EVIDENCE IN HUMANS IN THE ABSENCE OF SUFFICIENT
EVIDENCE IN EXPERIMENTAL ANIMALS
ACGIH A3: ANIMAL CARCINOGEN – AGENT IS
CARCINOGENIC IN EXPERIMENTAL ANIMALS AT A
RELATIVELY HIGH DOSE, BY ROUTES OF ADMINISTRATION,
AT SITES, OF HISTOLOGIC TYPES, OR BY MECHANISMS NOT
CONSIDERED RELEVANT TO WORKER EXPOSURE.
AVAILABLE EPIDEMOLOGIC STUDIES DO NOT CONFIRM AN
INCREASED RISK OF CANCER IN EXPOSED HUMANS.
AVAILABLE EVIDENCE SUGGESTS THAT THE AGENT IS NOT
LIKELY TO CAUSE CANCER IN HUMANS EXCEPT UNDER
UNCOMMON OR UNLIKELY ROUTES OR LEVELS OF
EXPOSURE.
ADDITIONAL INFORMATION: TO THE BEST OF OUR KNOWLEDGE THE ACUTE AND
CHRONIC TOXICITY OF THIS SUBSTANCE IS NOT FULLY
KNOWN.

11. TRANSPORTATION DATA

UN NUMBER: 3077
HAZARD CLASS: 9
PACKING GROUP: III
PROPER SHIPPING NAME: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. (COBALT (II,III) OXIDE)
ADR//RID CLASS: 9 (M7) MISCELLANEOUS DANGEROUS SUBSTANCES AND
ARTICLES
IMDG CLASS: 9
ICAO/IATA CLASS: 9

12. OTHER INFORMATION

THIS SAFETY DATA SHEET SHOULD BE USED IN CONJUNCTION WITH TECHNICAL SHEETS. IT
DOES NOT REPLACE THEM. THE INFORMATION GIVEN IS BASED ON OUR KNOWLEDGE OF THIS
PRODUCT, AT THE TIME OF PUBLICATION. IT IS GIVEN IN GOOD FAITH. THE ATTENTION OF THE
USER IS DRAWN TO THE POSSIBLE RISKS INCURRED BY USING THE PRODUCT FOR ANY OTHER
PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED. THIS DOES NOT IN ANY WAY
EXCUSE THE USER FROM KNOWING AND APPLYING ALL THE REGULATIONS GOVERNING HIS
ACTIVITY. IT IS THE SOLE RESPONSIBILITY OF THE USER TO TAKE ALL PRECAUTIONS REQUIRED
IN HANDLING THE PRODUCT. THE AIM OF THE MANDATORY REGULATIONS MENTIONED IS TO
HELP THE USER TO FULFILL HIS OBLIGATIONS REGARDING THE USE OF HAZARDOUS PRODUCTS.
