

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

C4939 -02 COBALT NITRATE, 6-HYDRATE PAGE: 1
EFFECTIVE: 01/04/94 ISSUED: 01/15/94

J.T.BAKER INC., 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865

=====
SECTION I - PRODUCT IDENTIFICATION
=====

PRODUCT NAME: COBALT NITRATE, 6-HYDRATE
COMMON SYNONYMS: COBALT (II) NITRATE, HEXAHYDRATE; COBALT DINITRATE,
HEXAHYDRATE
CHEMICAL FAMILY: COBALT COMPOUNDS
FORMULA: $CO(NO_3)_2 \cdot 6H_2O$
FORMULA WT.: 291.03
CAS NO.: 10026-22-9
NIOSH/RTECS NO.: QU7355500
PRODUCT USE: LABORATORY REAGENT
PRODUCT CODES: 1680,5074,1683

=====
PRECAUTIONARY LABELING
=====

PER SAF-T-DATA* SYSTEM

HEALTH	-	2	MODERATE
FLAMMABILITY	-	0	NONE
REACTIVITY	-	3	SEVERE (OXIDIZER)
CONTACT	-	1	SLIGHT

LABORATORY PROTECTIVE EQUIPMENT

GOGGLES; LAB COAT

U.S. PRECAUTIONARY LABELING

DANGER

STRONG OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIALS, FLAMMABLE MATERIALS, OR POWDERED METALS CAN CAUSE FIRE OR EXPLOSION. HARMFUL IF SWALLOWED. KEEP FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS. DO NOT STORE NEAR COMBUSTIBLE MATERIALS. AVOID CONTACT WITH EYES, SKIN, CLOTHING. KEEP IN TIGHTLY CLOSED CONTAINER. WASH THOROUGHLY AFTER HANDLING. IN CASE OF FIRE, SOAK WITH WATER. IN CASE OF SPILL, SWEEP UP AND REMOVE. FLUSH SPILL AREA WITH WATER.

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 2
ISSUED: 01/15/94

=====

PRECAUTIONARY LABELING (CONTINUED)

=====

INTERNATIONAL LABELING

CONTACT WITH COMBUSTIBLE MATERIAL MAY CAUSE FIRE. TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
KEEP AWAY FROM COMBUSTIBLE MATERIAL. AVOID EXPOSURE - OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

SAF-T-DATA* STORAGE COLOR CODE: YELLOW (REACTIVE)

=====

SECTION II - COMPONENTS

=====

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>WEIGHT %</u>	<u>OSHA/PEL</u>	<u>ACGIH/TLV</u>
COBALT NITRATE, 6-HYDRATE	10026-22-9	90-100	N/E	N/E

=====

SECTION III - PHYSICAL DATA

=====

BOILING POINT: 55 C (131 F)
(AT 760 MM HG)

VAPOR PRESSURE (MMHG): N/A

MELTING POINT: 56 C (132 F)
(AT 760 MM HG)

VAPOR DENSITY (AIR=1): N/A

SPECIFIC GRAVITY: 1.54
(H2O=1)

EVAPORATION RATE: N/A

SOLUBILITY(H2O): COMPLETE (100%)

% VOLATILES BY VOLUME: 0
(21 C)

PH: N/A

ODOR THRESHOLD (P.P.M.): N/A

PHYSICAL STATE: SOLID

COEFFICIENT WATER/OIL DISTRIBUTION: N/A

APPEARANCE & ODOR: RED CRYSTALS. ODORLESS.

C4939 -02 COBALT NITRATE, 6-HYDRATE PAGE: 3
EFFECTIVE: 01/04/94 ISSUED: 01/15/94

=====
SECTION IV - FIRE AND EXPLOSION HAZARD DATA
=====

FLASH POINT (CLOSED CUP): N/A NFPA 704M RATING: 0-0-0
AUTOIGNITION TEMPERATURE: N/A
FLAMMABLE LIMITS: UPPER - N/A LOWER - N/A

FIRE EXTINGUISHING MEDIA
USE WATER SPRAY.

SPECIAL FIRE-FIGHTING PROCEDURES
FIREFIGHTERS SHOULD WEAR PROPER PROTECTIVE EQUIPMENT AND SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN POSITIVE PRESSURE MODE. MOVE CONTAINERS FROM FIRE AREA IF IT CAN BE DONE WITHOUT RISK. USE WATER TO KEEP FIRE-EXPOSED CONTAINERS COOL.

UNUSUAL FIRE & EXPLOSION HAZARDS
STRONG OXIDIZER. CONTACT WITH COMBUSTIBLE MATERIALS, FLAMMABLE MATERIALS, OR POWDERED METALS CAN CAUSE FIRE OR EXPLOSION.

TOXIC GASES PRODUCED
OXIDES OF NITROGEN

EXPLOSION DATA-SENSITIVITY TO MECHANICAL IMPACT
NONE IDENTIFIED.

EXPLOSION DATA-SENSITIVITY TO STATIC DISCHARGE
NONE IDENTIFIED.

=====
SECTION V - HEALTH HAZARD DATA
=====

THRESHOLD LIMIT VALUE (TLV/TWA): NOT ESTABLISHED
SHORT-TERM EXPOSURE LIMIT (STEL): NOT ESTABLISHED
PERMISSIBLE EXPOSURE LIMIT (PEL): NOT ESTABLISHED

TOXICITY OF COMPONENTS

ORAL RAT LD50 FOR COBALT NITRATE, 6-HYDRATE 691 MG/KG
(MUTAGENICITY: NTP: NO IARC: NO Z LIST: NO OSHA REG: NO

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 4
ISSUED: 01/15/94

=====
SECTION V - HEALTH HAZARD DATA (CONTINUED)
=====

CARCINOGENICITY

NONE IDENTIFIED.

REPRODUCTIVE EFFECTS

NONE IDENTIFIED.

EFFECTS OF OVEREXPOSUR

INHALATION: IRRITATION OF NOSE AND THROAT, HEADACHE, COUGHING,
DIZZINESS, DIFFICULT BREATHING

SKIN CONTACT: NONE IDENTIFIED

EYE CONTACT: NONE IDENTIFIED

SKIN ABSORPTION: NONE IDENTIFIED

INGESTION: NAUSEA, VOMITING

CHRONIC EFFECTS: NONE IDENTIFIED

TARGET ORGANS

NONE IDENTIFIED

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE

NONE IDENTIFIED

PRIMARY ROUTES OF ENTRY

NONE INDICATED

EMERGENCY AND FIRST AID PROCEDURES

INGESTION: CALL A PHYSICIAN. IF SWALLOWED, IF CONSCIOUS, IMMEDIATELY
INDUCE VOMITING.

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE
ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE
OXYGEN.

SKIN CONTACT: IN CASE OF CONTACT, FLUSH SKIN WITH WATER.

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 5
ISSUED: 01/15/94

=====
SECTION V - HEALTH HAZARD DATA (CONTINUED)
=====

EYE CONTACT: IN CASE OF EYE CONTACT, IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES.

SARA/TITLE III HAZARD CATEGORIES AND LISTS

ACUTE: YES CHRONIC: YES FLAMMABILITY: YES PRESSURE: NO REACTIVITY: NO

EXTREMELY HAZARDOUS SUBSTANCE: YES CONTAINS COBALT (RQ = 1 LB, TPQ = 10,000 LBS)

CERCLA HAZARDOUS SUBSTANCE: NO

SARA 313 TOXIC CHEMICALS: YES CONTAINS COBALT

GENERIC CLASS: GENERIC CLASS REMOVED FROM CFR: 7/1/91

TSCA INVENTORY: YES

=====
SECTION VI - REACTIVITY DATA
=====

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: NONE IDENTIFIED

INCOMPATIBLES: COMBUSTIBLE MATERIALS, STRONG REDUCING AGENTS

DECOMPOSITION PRODUCTS: OXIDES OF NITROGEN

=====
SECTION VII - SPILL & DISPOSAL PROCEDURES
=====

STEPS TO BE TAKEN IN THE EVENT OF A SPILL OR DISCHARGE

WEAR SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE CLOTHING. KEEP COMBUSTIBLES (WOOD, PAPER, OIL, ETC.) AWAY FROM SPILLED MATERIAL. WITH CLEAN SHOVEL, CAREFULLY PLACE MATERIAL INTO CLEAN, DRY CONTAINER AND COVER; REMOVE FROM AREA. FLUSH SPILL AREA WITH WATER.

DISPOSAL PROCEDURE

DISPOSE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL ENVIRONMENTAL REGULATIONS.

EPA HAZARDOUS WASTE NUMBER: D001 (IGNITABLE WASTE)

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 6
ISSUED: 01/15/94

=====
SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT
=====

VENTILATION: USE ADEQUATE GENERAL OR LOCAL EXHAUST VENTILATION TO
KEEP FUME OR DUST LEVELS AS LOW AS POSSIBLE.

RESPIRATORY PROTECTION: NONE REQUIRED WHERE ADEQUATE VENTILATION CONDITIONS
EXIST. IF AIRBORNE CONCENTRATION IS HIGH, USE AN
APPROPRIATE RESPIRATOR OR DUST MASK.

EYE/SKIN PROTECTION: SAFETY GOGGLES, BUTYL RUBBER GLOVES ARE RECOMMENDED.

=====
SECTION IX - STORAGE AND HANDLING PRECAUTIONS
=====

SAF-T-DATA* STORAGE COLOR CODE: YELLOW (REACTIVE)

STORAGE REQUIREMENTS

KEEP CONTAINER TIGHTLY CLOSED. STORE SEPARATELY AND AWAY FROM FLAMMABLE
AND COMBUSTIBLE MATERIALS.

=====
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION
=====

DOMESTIC (D.O.T.)

PROPER SHIPPING NAME: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE, 6-HYDRATE)
HAZARD CLASS: 5.1
UN/NA: UN1477 PACKAGING GROUP: II
LABELS: 5.1 OXIDIZER
REGULATORY REFERENCES: 49CFR 172.101

INTERNATIONAL (I.M.O.)

PROPER SHIPPING NAME: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE, 6-HYDRATE)
HAZARD CLASS: 5.1 I.M.O. PAGE: 5162
UN: UN1477 MARINE POLLUTANTS: NO PACKAGING GROUP: II
LABELS: OXIDIZING AGENT
REGULATORY REFERENCES: 49CFR PART 176; IMDG CODE

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 7
ISSUED: 01/15/94

=====
SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)
=====

AIR (I.C.A.O.)

PROPER SHIPPING NAME: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE, 6-HYDRATE)
HAZARD CLASS: 5.1
UN: UN1477 PACKAGING GROUP: II
LABELS: OXIDIZING AGENT
REGULATORY REFERENCES: 49CFR PART 175; ICAO=== WE BELIEVE THE TRANSPORTATION

DATA AND REFERENCES CONTAINED HEREIN TO BE FACTUAL AND THE OPINION OF QUALIFIED EXPERTS. THE DATA IS MEANT AS A GUIDE TO THE OVERALL CLASSIFICATION OF THE PRODUCT AND IS NOT PACKAGE SIZE SPECIFIC, NOR SHOULD IT BE TAKEN AS A WARRANTY OR REPRESENTATION FOR WHICH THE COMPANY ASSUMES LEGAL RESPONSIBILITY.=== THE INFORMATION IS OFFERED SOLELY FOR YOUR CONSIDERATION, INVESTIGATION, AND VERIFICATION. ANY USE OF THE INFORMATION MUST BE DETERMINED BY THE USER TO BE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. SEE SHIPPER REQUIREMENTS 49CFR 171.2, CERTIFICATION 172.204, AND EMPLOYEE TRAINING 49 CFR 173.1(B).

U.S. CUSTOMS HARMONIZATION NUMBER: 28342900005

=====
NOTE: WHEN HANDLING LIQUID PRODUCTS, SECONDARY PROTECTIVE CONTAINERS MUST BE USED FOR CARRYING.

-N/A = NOT APPLICABLE, OR NOT AVAILABLE;

N/E = NOT ESTABLISHED.-

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET MEETS THE REQUIREMENTS OF THE UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ACT AND REGULATIONS PROMULGATED THEREUNDER (29 CFR 1910.1200 ET. SEQ.) AND THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. THIS DOCUMENT IS INTENDED ONLY AS A GUIDE TO THE APPROPRIATE PRECAUTIONARY HANDLING OF THE MATERIAL BY A PERSON TRAINED IN, OR SUPERVISED BY A PERSON TRAINED IN, CHEMICAL HANDLING. THE USER IS RESPONSIBLE FOR DETERMINING THE PRECAUTIONS AND DANGERS OF THIS CHEMICAL FOR HIS OR HER PARTICULAR APPLICATION. DEPENDING ON USAGE, PROTECTIVE CLOTHING INCLUDING EYE AND FACE GUARDS AND RESPIRATORS MUST BE USED TO AVOID CONTACT WITH MATERIAL OR BREATHING CHEMICAL VAPORS/FUMES.

BE SURE TO THIS PRODUCT MAY HAVE SERIOUS ADVERSE HEALTH EFFECTS. THIS CHEMICAL MAY INTERACT WITH OTHER SUBSTANCES. SINCE THE POTENTIAL USES ARE SO VARIED, BAKER CANNOT WARN OF ALL OF THE POTENTIAL DANGERS OF USE

CONTINUED ON PAGE: 8

J.T.BAKER INC. 222 RED SCHOOL LANE, PHILLIPSBURG, NJ 08865
M A T E R I A L S A F E T Y D A T A S H E E T
24-HOUR EMERGENCY TELEPHONE -- (908) 859-2151
CHEMTREC # (800) 424-9300 -- NATIONAL RESPONSE CENTER # (800) 424-8802

C4939 -02
EFFECTIVE: 01/04/94

COBALT NITRATE, 6-HYDRATE

PAGE: 8
ISSUED: 01/15/94

=====

OR INTERACTION WITH OTHER CHEMICALS OR MATERIALS. BAKER WARRANTS THAT THE CHEMICAL MEETS THE SPECIFICATIONS SET FORTH ON THE LABEL. BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE.

THE USER SHOULD RECOGNIZE THAT THIS PRODUCT CAN CAUSE SEVERE INJURY AND EVEN DEATH, ESPECIALLY IF IMPROPERLY HANDLED OR THE KNOWN DANGERS OF USE ARE NOT HEEDDED. READ ALL PRECAUTIONARY INFORMATION. AS NEW DOCUMENTED GENERAL SAFETY INFORMATION BECOMES AVAILABLE, BAKER WILL PERIODICALLY REVISE THIS MATERIAL SAFETY DATA SHEET.

NOTE: CHEMTREC, CANUTEC, AND NATIONAL RESPONSE CENTER EMERGENCY TELEPHONE NUMBERS ARE TO BE USED ONLY IN THE EVENT OF CHEMICAL EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT INVOLVING CHEMICALS. ALL NON-EMERGENCY QUESTIONS SHOULD BE DIRECTED TO CUSTOMER SERVICE (1-800-JTBAKER) FOR ASSISTANCE.

COPYRIGHT 1994 J.T.BAKER INC.
* TRADEMARKS OF J.T.BAKER INC.

===
APPROVED BY QUALITY ASSURANCE DEPARTMENT.