

# ***Chem-Impex International Inc.***

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## **S A F E T Y   D A T A   S H E E T**

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### **SECTION 1.   CHEMICAL IDENTIFICATION**

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|                                    |                                                         |
|------------------------------------|---------------------------------------------------------|
| CATALOG #:                         | 47085                                                   |
| NAME:                              | Carbon coated nickel nanopowder (20 nm)                 |
| 24 HOUR<br>EMERGENCY<br>TELEPHONE: | (800) 535-5053(USA)<br><br>352-323-3500 (INTERNATIONAL) |
| TO REQUEST AN<br>MSDS:             | (800) 869-9290                                          |
| CUSTOMER<br>SERVICE:               | (630) 766-2112                                          |

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### **SECTION 2.   HAZARDS IDENTIFICATION**

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#### **CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**

##### **GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)**

SKIN SENSITIZATION (CATEGORY 1), H317

CARCINOGENICITY (CATEGORY 2), H351

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE, INHALATION  
(CATEGORY 1), LUNGS, H372

SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 3), H402

LONG-TERM (CHRONIC) AQUATIC HAZARD (CATEGORY 3), H412

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE  
SECTION 16.

#### **GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

PICTOGRAM



SIGNAL WORD DANGER

**HAZARD STATEMENT(S)**

H317 MAY CAUSE AN ALLERGIC SKIN REACTION.  
H351 SUSPECTED OF CAUSING CANCER  
H372 CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE IF INHALED.  
H412 HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.

**PRECAUTIONARY STATEMENT(S)**

P201 OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.  
P202 DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.  
P260 DO NOT BREATHE DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.  
P264 WASH SKIN THOROUGHLY AFTER HANDLING.  
P270 DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.  
P272 CONTAMINATED WORK CLOTHING SHOULD NOT BE ALLOWED OUT OF THE WORKPLACE.  
P273 AVOID RELEASE TO THE ENVIRONMENT.  
P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.  
P302 + P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER.  
P308 + P313 IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ ATTENTION.  
P333 + P313 IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ ATTENTION.  
P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.  
P405 STORE LOCKED UP.  
P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

**HAZARDS NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS** NONE

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

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MF: Ni  
MW: 58.69  
CAS-NO. 7440-02-0

PURITY:  $\geq 99.9\%$  (Trace metals basis)

#### HAZARDOUS COMPONENTS

| COMPONENT                                      | CLASSIFICATION                                                                                              | CONCENTRATION |
|------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------|
| <b>CARBON COATED NICKEL NANOPOWDER (20 NM)</b> |                                                                                                             |               |
|                                                | SKIN SENS. 1; CARC. 2;<br>STOT RE 1; AQUATIC ACUTE<br>3; AQUATIC CHRONIC 3;<br>H317, H351, H372, H402, H412 | $\leq 100\%$  |

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

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## SECTION 4. FIRST-AID MEASURES

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### DESCRIPTION OF FIRST AID MEASURES

|                                                                                   |                                                                                                                              |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>GENERAL ADVICE</b>                                                             | SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.                                                            |
| <b>IF INHALED</b>                                                                 | AFTER INHALATION: FRESH AIR. CALL IN PHYSICIAN.                                                                              |
| <b>IN CASE OF SKIN CONTACT</b>                                                    | IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CONSULT A PHYSICIAN. |
| <b>IN CASE OF EYE CONTACT</b>                                                     | AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.                           |
| <b>IF SWALLOWED</b>                                                               | AFTER SWALLOWING: IMMEDIATELY MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST). CONSULT A PHYSICIAN.                            |
| <b>MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED</b>                | THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11.         |
| <b>INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED</b> | NO DATA AVAILABLE                                                                                                            |

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## SECTION 5. FIRE AND EXPLOSION DATA

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### EXTINGUISHING MEDIA

|                                                                          |                                                                                                                                                                                                                                                                                    |
|--------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SUITABLE<br/>EXTINGUISHING MEDIA</b>                                  | <p>SUITABLE EXTINGUISHING MEDIA<br/>USE EXTINGUISHING MEASURES THAT ARE<br/>APPROPRIATE TO LOCAL CIRCUMSTANCES AND THE<br/>SURROUNDING ENVIRONMENT.</p> <p>UNSUITABLE EXTINGUISHING MEDIA<br/>FOR THIS SUBSTANCE/MIXTURE NO LIMITATIONS OF<br/>EXTINGUISHING AGENTS ARE GIVEN.</p> |
| <b>SPECIAL HAZARDS<br/>ARISING FROM THE<br/>SUBSTANCE OR<br/>MIXTURE</b> | <p>NICKEL/NICKEL OXIDES<br/>NOT COMBUSTIBLE.<br/>AMBIENT FIRE MAY LIBERATE HAZARDOUS VAPOURS.</p>                                                                                                                                                                                  |
| <b>ADVICE FOR<br/>FIREFIGHTERS</b>                                       | <p>STAY IN DANGER AREA ONLY WITH SELF-CONTAINED<br/>BREATHING APPARATUS. PREVENT SKIN CONTACT BY<br/>KEEPING A SAFE DISTANCE OR BY WEARING SUITABLE<br/>PROTECTIVE CLOTHING</p>                                                                                                    |
| <b>FURTHER<br/>INFORMATION</b>                                           | <p>SUPPRESS (KNOCK DOWN) GASES/VAPORS/MISTS WITH<br/>A WATER SPRAY JET. PREVENT FIRE EXTINGUISHING<br/>WATER FROM CONTAMINATING SURFACE WATER OR<br/>THE GROUND WATER SYSTEM.</p>                                                                                                  |

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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|                                                                                                |                                                                                                                                                                                                                                                                                                           |
|------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PERSONAL<br/>PRECAUTIONS,<br/>PROTECTIVE<br/>EQUIPMENT AND<br/>EMERGENCY<br/>PROCEDURES</b> | <p>ADVICE FOR NON-EMERGENCY PERSONNEL: AVOID<br/>GENERATION AND INHALATION OF DUSTS IN ALL<br/>CIRCUMSTANCES. AVOID SUBSTANCE CONTACT.<br/>ENSURE ADEQUATE VENTILATION. EVACUATE THE<br/>DANGER AREA, OBSERVE EMERGENCY PROCEDURES,<br/>CONSULT AN EXPERT.<br/>FOR PERSONAL PROTECTION SEE SECTION 8.</p> |
| <b>ENVIRONMENTAL<br/>PRECAUTIONS</b>                                                           | <p>DO NOT LET PRODUCT ENTER DRAINS.</p>                                                                                                                                                                                                                                                                   |
| <b>METHODS AND<br/>MATERIALS FOR<br/>CONTAINMENT AND<br/>CLEANING UP</b>                       | <p>COVER DRAINS. COLLECT, BIND, AND PUMP OFF SPILLS.<br/>OBSERVE POSSIBLE MATERIAL RESTRICTIONS<br/>(SEE SECTIONS 7 AND 10). TAKE UP DRY. DISPOSE OF<br/>PROPERLY. CLEAN UP AFFECTED AREA. AVOID<br/>GENERATION OF DUSTS.</p>                                                                             |
| <b>REFERENCE TO OTHER<br/>SECTIONS</b>                                                         | <p>FOR DISPOSAL SEE SECTION 13.</p>                                                                                                                                                                                                                                                                       |

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## SECTION 7. HANDLING AND STORAGE

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**PRECAUTIONS FOR  
SAFE HANDLING**

WORK UNDER HOOD. DO NOT INHALE  
SUBSTANCE/MIXTURE.  
IMMEDIATELY CHANGE CONTAMINATED CLOTHING.  
APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS  
AND FACE AFTER WORKING WITH SUBSTANCE.  
FOR PRECAUTIONS SEE SECTION 2.2.

**CONDITIONS FOR SAFE  
STORAGE, INCLUDING  
ANY  
INCOMPATIBILITIES**

TIGHTLY CLOSED. KEEP AWAY FROM HEAT AND  
SOURCES OF IGNITION. KEEP LOCKED UP OR IN AN  
AREA ACCESSIBLE ONLY TO QUALIFIED OR  
AUTHORIZED PERSONS.  
KEEP IN A DRY PLACE. HANDLE AND STORE UNDER  
INERT GAS.

STORAGE CLASS (TRGS 510): 4.1B: FLAMMABLE SOLID  
HAZARDOUS MATERIALS

Store at RT

**SPECIFIC END USE(S)**

APART FROM THE USES MENTIONED IN SECTION 1.2 NO  
OTHER SPECIFIC USES ARE STIPULATED.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**CONTROL PARAMETERS****COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

| COMPONENT                                        | CAS-NO.   | VALUE                               | CONTROL<br>PARAMETERS | BASIS                                                                                  |
|--------------------------------------------------|-----------|-------------------------------------|-----------------------|----------------------------------------------------------------------------------------|
| CARBON COATED<br>NICKEL<br>NANOPOWDER<br>(20 NM) | 7440-02-0 | TWA                                 | 1.5 MG/M3             | USA. ACGIH THRESHOLD LIMIT<br>VALUES (TLV)                                             |
|                                                  | REMARKS   | NOT SUSPECTED AS A HUMAN CARCINOGEN |                       |                                                                                        |
|                                                  |           | PEL                                 | 0.5 MG/M3             | CALIFORNIA PERMISSIBLE<br>EXPOSURE LIMITS FOR CHEMICAL<br>CONTAMINANTS                 |
|                                                  |           | TWA                                 | 1 MG/M3               | USA. OCCUPATIONAL EXPOSURE<br>LIMITS (OSHA) - TABLE Z-1<br>LIMITS FOR AIR CONTAMINANTS |
|                                                  |           | TWA                                 | 0.015 MG/M3           | USA. NIOSH RECOMMENDED<br>EXPOSURE LIMITS                                              |
|                                                  |           | POTENTIAL OCCUPATIONAL CARCINOGEN   |                       |                                                                                        |

**BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS**

| COMPONENT                                           | CAS-NO.   | PARAMETERS | VALUE  | BIOLOGICAL<br>SPECIMEN | BASIS                                              |
|-----------------------------------------------------|-----------|------------|--------|------------------------|----------------------------------------------------|
| CARBON<br>COATED<br>NICKEL<br>NANOPOWDER<br>(20 NM) | 7440-02-0 | NICKEL     | 5 MG/L | URINE                  | ACGIH -<br>BIOLOGICAL<br>EXPOSURE INDICES<br>(BEI) |

|  |         |                                 |         |       |                                                    |
|--|---------|---------------------------------|---------|-------|----------------------------------------------------|
|  | REMARKS | END OF SHIFT AT END OF WORKWEEK |         |       |                                                    |
|  |         | NICKEL                          | 30 MG/L | URINE | ACGIH -<br>BIOLOGICAL<br>EXPOSURE INDICES<br>(BEI) |
|  |         | END OF SHIFT AT END OF WORKWEEK |         |       |                                                    |

## EXPOSURE CONTROLS

**APPROPRIATE ENGINEERING CONTROLS** IMMEDIATELY CHANGE CONTAMINATED CLOTHING. APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND FACE AFTER WORKING WITH SUBSTANCE.

## PERSONAL PROTECTIVE EQUIPMENT

**EYE/FACE PROTECTION** USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU). SAFETY GLASSES

**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.

FULL CONTACT  
MATERIAL: NITRILE RUBBER  
MINIMUM LAYER THICKNESS: 0.11 MM  
BREAK THROUGH TIME: 480 MIN  
MATERIAL TESTED:DERMATRIL® (KCL 740, SIZE M)

SPLASH CONTACT  
MATERIAL: NITRILE RUBBER  
MINIMUM LAYER THICKNESS: 0.11 MM  
BREAK THROUGH TIME: 480 MIN  
MATERIAL TESTED:DERMATRIL® (KCL 740, SIZE M)

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.

**BODY PROTECTION** PROTECTIVE CLOTHING

**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.

**CONTROL OF  
ENVIRONMENTAL  
EXPOSURE**

DO NOT LET PRODUCT ENTER DRAINS.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

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**INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES**

|                                                    |                                                                       |
|----------------------------------------------------|-----------------------------------------------------------------------|
| APPEARANCE                                         | BLACK POWDER                                                          |
| ODOUR                                              | NO DATA AVAILABLE                                                     |
| ODOUR THRESHOLD                                    | NO DATA AVAILABLE                                                     |
| PH                                                 | NO DATA AVAILABLE                                                     |
| MELTING                                            | NO DATA AVAILABLE                                                     |
| POINT/FREEZING POINT                               |                                                                       |
| BOILING POINT                                      | NO DATA AVAILABLE                                                     |
| FLASH POINT                                        | NO DATA AVAILABLE                                                     |
| EVAPOURATION RATE                                  | NO DATA AVAILABLE                                                     |
| FLAMMABILITY (SOLID,<br>GAS)                       | THE SUBSTANCE OR MIXTURE IS A FLAMMABLE SOLID<br>WITH THE CATEGORY 2. |
| UPPER/LOWER<br>FLAMMABILITY OR<br>EXPLOSIVE LIMITS | NO DATA AVAILABLE                                                     |
| VAPOUR PRESSURE                                    | 1 HPA AT 1,810 °C                                                     |
| VAPOUR DENSITY                                     | NO DATA AVAILABLE                                                     |
| RELATIVE DENSITY                                   | NO DATA AVAILABLE                                                     |
| WATER SOLUBILITY                                   | INSOLUBLE                                                             |
| PARTITION                                          | NOT APPLICABLE FOR INORGANIC SUBSTANCES                               |
| COEFFICIENT: N-<br>OCTANOL/WATER                   |                                                                       |
| AUTO-IGNITION<br>TEMPERATURE                       | NO DATA AVAILABLE                                                     |
| DECOMPOSITION<br>TEMPERATURE                       | NO DATA AVAILABLE                                                     |
| VISCOSITY                                          | NO DATA AVAILABLE                                                     |
| EXPLOSIVE<br>PROPERTIES                            | NO DATA AVAILABLE                                                     |
| OXIDIZING PROPERTIES                               | NO DATA AVAILABLE                                                     |

**OTHER SAFETY INFORMATION**

NO DATA AVAILABLE

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**SECTION 10. STABILITY AND REACTIVITY**

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|                                           |                                                                                                                          |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>REACTIVITY</b>                         | NO DATA AVAILABLE                                                                                                        |
| <b>CHEMICAL STABILITY</b>                 | THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS.                                                      |
| <b>POSSIBILITY OF HAZARDOUS REACTIONS</b> | NO DATA AVAILABLE                                                                                                        |
| <b>CONDITIONS TO AVOID</b>                | NO DATA AVAILABLE                                                                                                        |
| <b>INCOMPATIBLE MATERIALS</b>             | ACIDS, OXIDIZING AGENTS, SULFUR COMPOUNDS, HYDROGEN GAS, OXYGEN, METHANOL, ORGANIC SOLVENTS, ALUMINUM, FLUORINE, AMMONIA |
| <b>HAZARDOUS DECOMPOSITION PRODUCTS</b>   | IN THE EVENT OF FIRE: SEE SECTION 5                                                                                      |

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## SECTION 11. TOXICOLOGICAL INFORMATION

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### INFORMATION ON TOXICOLOGICAL EFFECTS

|                                          |                                                                             |
|------------------------------------------|-----------------------------------------------------------------------------|
| <b>ACUTE TOXICITY</b>                    | LD50 ORAL - RAT - MALE AND FEMALE - > 9,000 MG/KG (OECD TEST GUIDELINE 401) |
|                                          | INHALATION: NO DATA AVAILABLE                                               |
|                                          | DERMAL: NO DATA AVAILABLE                                                   |
|                                          | NO DATA AVAILABLE                                                           |
| <b>SKIN CORROSION/IRRITATION</b>         | SKIN - RABBIT<br>RESULT: NO SKIN IRRITATION - 4 H (OECD TEST GUIDELINE 404) |
| <b>SERIOUS EYE DAMAGE/EYE IRRITATION</b> | EYES - RABBIT<br>RESULT: NO EYE IRRITATION (OECD TEST GUIDELINE 405)        |
| <b>RESPIRATORY OR SKIN SENSITISATION</b> | NO DATA AVAILABLE                                                           |

**GERM CELL  
MUTAGENICITY**

TEST TYPE: GENE MUTATION TEST  
TEST SYSTEM: CHINESE HAMSTER FIBROBLASTS  
METABOLIC ACTIVATION: WITHOUT METABOLIC  
ACTIVATION  
METHOD: OECD TEST GUIDELINE 476  
RESULT: NEGATIVE  
TEST TYPE: MICRONUCLEUS TEST  
TEST SYSTEM: CHINESE HAMSTER FIBROBLASTS  
METABOLIC ACTIVATION: WITH AND WITHOUT  
METABOLIC ACTIVATION  
METHOD: OECD TEST GUIDELINE 487  
RESULT: NEGATIVE

**CARCINOGENICITY  
IARC:**

SUSPECTED OF CAUSING CANCER.  
2B - GROUP 2B: POSSIBLY CARCINOGENIC TO HUMANS  
(NICKEL POWDER; [PARTICLE DIAMETER < 1 MM])

**NTP:**

1 - GROUP 1: CARCINOGENIC TO HUMANS (NICKEL  
POWDER; [PARTICLE DIAMETER < 1 MM])  
RAHC - REASONABLY ANTICIPATED TO BE A HUMAN  
CARCINOGEN (NICKEL POWDER; [PARTICLE DIAMETER <  
1 MM])

**OSHA:**

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS  
GREATER THAN OR EQUAL TO 0.1% IS ON OSHA'S LIST  
OF REGULATED CARCINOGENS.

**REPRODUCTIVE  
TOXICITY**

NO DATA AVAILABLE

**SPECIFIC TARGET  
ORGAN TOXICITY -  
SINGLE EXPOSURE**

NO DATA AVAILABLE

**SPECIFIC TARGET  
ORGAN TOXICITY -  
REPEATED EXPOSURE**

INHALATION - CAUSES DAMAGE TO ORGANS THROUGH  
PROLONGED OR REPEATED EXPOSURE. - LUNGS

**ASPIRATION HAZARD**

NO DATA AVAILABLE

**ADDITIONAL  
INFORMATION**

RTECS: NOT AVAILABLE

REPEATED DOSE TOXICITY - RAT - MALE AND FEMALE -  
ORAL - 728 D - NOAEL (NO OBSERVED ADVERSE EFFECT  
LEVEL) - 2.2 MG/KG - LOAEL (LOWEST OBSERVED  
ADVERSE EFFECT LEVEL) - 6.7 MG/KG

TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,  
PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE  
NOT BEEN THOROUGHLY INVESTIGATED.

STOMACH - IRREGULARITIES - BASED ON HUMAN  
EVIDENCE

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**SECTION 12. ECOLOGICAL INFORMATION**

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|                                                                        |                                                                                                                       |
|------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| <b>TOXICITY</b>                                                        |                                                                                                                       |
| TOXICITY TO FISH                                                       | SEMI-STATIC TEST LC50 - ONCORHYNCHUS MYKISS (RAINBOW TROUT) - 15.3 MG/L - 96 H<br>REMARKS: (ECHA)                     |
| TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES                    | STATIC TEST LC50 - CERIODAPHNIA DUBIA (WATER FLEA) - 0.074 MG/L – 48 H<br>REMARKS: (ECHA)                             |
| TOXICITY TO ALGAE                                                      | STATIC TEST EC50 - PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE) - > 81.5 - 148 MG/L - 72 H (OECD TEST GUIDELINE 201) |
| TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES (CHRONIC TOXICITY) | SEMI-STATIC TEST EC10 - CERIODAPHNIA DUBIA (WATER FLEA) - > 2.8 - 53.6 MG/L - 7 D (US-EPA)                            |
| <b>PERSISTENCE AND DEGRADABILITY</b>                                   | THE METHODS FOR DETERMINING BIODEGRADABILITY ARE NOT APPLICABLE TO INORGANIC SUBSTANCES.                              |
| <b>BIOACCUMULATIVE POTENTIAL</b>                                       | NO DATA AVAILABLE                                                                                                     |
| <b>MOBILITY IN SOIL</b>                                                | NO DATA AVAILABLE                                                                                                     |
| <b>RESULTS OF PBT AND VPVB ASSESSMENT</b>                              | PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED                            |
| <b>OTHER ADVERSE EFFECTS</b>                                           | NO DATA AVAILABLE                                                                                                     |

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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**WASTE TREATMENT METHODS**

|                               |                                                                                                                                                                                                                       |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PRODUCT</b>                | WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE NATIONAL AND LOCAL REGULATIONS.<br>LEAVE CHEMICALS IN ORIGINAL CONTAINERS. NO MIXING WITH OTHER WASTE. HANDLE UNCLEARED CONTAINERS LIKE THE PRODUCT ITSELF. |
| <b>CONTAMINATED PACKAGING</b> | DISPOSE OF AS UNUSED PRODUCT.                                                                                                                                                                                         |

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## SECTION 14.     TRANSPORT INFORMATION

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### DOT (US)

PROPER SHIPPING NAME:   METAL POWDER, FLAMMABLE, N.O.S. (Carbon coated  
nickel nanopowder (20 nm))  
UN NUMBER:                3089  
CLASS:                     4.1  
PACKING GROUP:            II  
REPORTABLE QUANTITY  
(RQ):  
POISON INHALATION        NO  
HAZARD:

### IMDG

PROPER SHIPPING NAME:   METAL POWDER, FLAMMABLE, N.O.S. (Carbon coated  
nickel nanopowder (20 nm))  
UN NUMBER:                3089  
CLASS:                     4.1  
PACKING GROUP:            II  
EMS-NO:                  F-G, S-G  
MARINE POLLUTANT :       YES

### IATA

PROPER SHIPPING NAME:   METAL POWDER, FLAMMABLE, N.O.S. (Carbon coated  
nickel nanopowder (20 nm))  
UN NUMBER:                3089  
CLASS:                     4.1  
PACKING GROUP:            II

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## SECTION 15.     REGULATORY INFORMATION

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**SARA 302 COMPONENTS**   THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS  
WITH A SECTION 302 EHS TPQ.

**SARA 313 COMPONENTS**   THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL  
COMPONENTS WITH KNOWN CAS NUMBERS THAT  
EXCEED THE THRESHOLD (DE MINIMIS) REPORTING  
LEVELS ESTABLISHED BY SARA TITLE III, SECTION  
313.

**SARA 311/312 HAZARDS**   FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC  
HEALTH HAZARD

### MASSACHUSETTS RIGHT TO KNOW COMPONENTS

NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

### PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS NO.

REVISION DATE

CARBON COATED  
NICKEL NANOPOWDER  
(20 NM)

7440-02-0

02-16-1993

**CALIFORNIA PROP. 65 COMPONENTS**

WHICH IS/ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

CARBON COATED  
NICKEL NANOPOWDER  
(20 NM)

CAS NO.  
7440-02-0

REVISION DATE  
04-11-2017

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**SECTION 16. OTHER INFORMATION**

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**FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.**

|      |                                                                               |
|------|-------------------------------------------------------------------------------|
| H317 | MAY CAUSE AN ALLERGIC SKIN REACTION.                                          |
| H351 | SUSPECTED OF CAUSING CANCER                                                   |
| H372 | CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR<br>REPEATED EXPOSURE IF INHALED. |
| H412 | HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS.                            |

**MSDS LEGEND**

|        |                                                              |
|--------|--------------------------------------------------------------|
| MW:    | MOLECULAR WEIGHT                                             |
| MF:    | MOLECULAR FORMULA                                            |
| VOC:   | VOLATILE ORGANIC COMPOUNDS                                   |
| ACGIH: | AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL<br>HYGIENISTS |
| CAS:   | CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER                   |
| OSHA:  | OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION                |
| PEL:   | PERMISSIBLE EXPOSURE LIMIT (OSHA)                            |
| TLV:   | THRESHOLD LIMIT VALUE (ACGIH)                                |

**IMPORTANT:**

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