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SDS

**Common Name:** CAST IRON WELDING ELECTRODES**Manufacturer:** GRAINGER GLOBAL SOURCING**SDS Revision Date:** 11/17/2014**SDS Format:** GHS-US**Item Number(s):** 24D942, 24D943, 24D944, 24D945**Manufacturer Model Number(s):**

## SDS Table of Contents

Click the desired link below to jump directly to that section in the SDS.

[SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE](#)  
[SECTION 2: HAZARDS IDENTIFICATION](#)  
[SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS](#)  
[SECTION 4: FIRST AID MEASURES](#)  
[SECTION 5: FIREFIGHTING MEASURES](#)  
[SECTION 6: ACCIDENTAL RELEASE MEASURES](#)  
[SECTION 7: HANDLING AND STORAGE](#)  
[SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION](#)  
[SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES](#)  
[SECTION 10: STABILITY AND REACTIVITY](#)  
[SECTION 11: TOXICOLOGICAL INFORMATION](#)  
[SECTION 12: ECOLOGICAL INFORMATION](#)  
[SECTION 13: DISPOSAL CONSIDERATIONS](#)  
[SECTION 14: TRANSPORT INFORMATION](#)  
[SECTION 15: REGULATORY INFORMATION](#)  
[SECTION 16: OTHER INFORMATION](#)

CAST IRON WELDING ELECTRODES

SAFETY DATA SHEET

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE



AND OF THE COMPANY/UNDERTAKING

### 1.1. PRODUCT IDENTIFIER:

PRODUCT NAME: CAST IRON WELDING ELECTRODES

AWS SPECIFICATIONS: A5.15

GGS SKU NO.: 24D942 TO 24D945

### 1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

USE OF THE SUBSTANCE/MIXTURE: FOR WELDING CONSUMABLES AND RELATED PRODUCTS

### 1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

GRAINGER GLOBAL SOURCING  
100 GRAINGER PARKWAY  
LAKE FOREST, IL 60045

USA

TEL: 847-535-1000

1.4. EMERGENCY TELEPHONE NUMBER:

EMERGENCY PHONE NUMBER:

GRAINGER TECHNICAL SUPPORT AT: 1-800-356-2501

IN THE CASE OF POISONING, CONTACT CHEMTREC:

1-800-424-9300 (TOLL-FREE)

00 OR +1-703-527-3887 (NON-US)

## SECTION 2: HAZARDS IDENTIFICATION



2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE:

GHS-US CLASSIFICATION:

SKIN SENS. 1: H317

CARC. 1B: H350

STOT RE 1: H372

AQUATIC ACUTE 1: H400

AQUATIC CHRONIC 3: H412

2.2. LABEL ELEMENTS:

GHS-US LABELLING:

HAZARD PICTOGRAMS (GHS-US):

GHS07: EXCLAMATION MARK

GHS08: HEALTH HAZARD

GHS09: ENVIRONMENT

SIGNAL WORD (GHS-US): DANGER

HAZARD STATEMENTS (GHS-US):

H317: MAY CAUSE AN ALLERGIC SKIN REACTION

H350: MAY CAUSE CANCER

H372: CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE

H400: VERY TOXIC TO AQUATIC LIFE

H412: HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS

PRECAUTIONARY STATEMENTS (GHS-US):

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/VAPORS/SPRAY

P261: AVOID BREATHING DUST/FUME/GAS/MIST/VAPORS/SPRAY

P264: WASH 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

P314: GET MEDICAL ADVICE AND ATTENTION IF YOU FEEL UNWELL

P333+P313:

IF SKIN IRRITATION OR RASH OCCURS: GET MEDICAL ADVICE/ATTENTION

P362+P364: TAKE OFF CONTAMINATED CLOTHING AND WASH IT BEFORE REUSE

P391: COLLECT SPILLAGE

P405: STORE LOCKED UP

P501:

DISPOSE OF CONTENTS/CONTAINER IN ACCORDANCE WITH LOCAL/REGIONAL/NATIONAL/INTERNATIONAL REGULATIONS.

2.3. OTHER HAZARDS: NO ADDITIONAL INFORMATION AVAILABLE

2.4. UNKNOWN ACUTE TOXICITY (GHS-US): NO DATA AVAILABLE

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS



3.1. SUBSTANCES: NOT APPLICABLE

FULL TEXT OF H-PHRASES: SEE SECTION 16

3.2. MIXTURE:

NAME	PRODUCT IDENTIFIER	%	GHS-US CLASSIFICATION
NICKEL (Ni)	(CAS NO): 7440-02-0	35 - 85	SKIN SENS. 1, H317 CARC. 1B, H350 STOT RE 1, H372
IRON (Fe)	(CAS NO): 7439-89-6	0.08 - 41.97	ACUTE TOX. 4 (ORAL), H302
MANGANESE (Mn)	(CAS NO): 7439-96-5	2.5 - 14	NOT CLASSIFIED
SILICON (Si)	(CAS NO): 7440-21-3	1 - 3	NOT CLASSIFIED
COPPER (Cu)	(CAS NO): 7440-50-8	2.5	NOT CLASSIFIED
ALUMINUM (Al)	(CAS NO): 7429-90-5	1	NOT CLASSIFIED
CARBON (C)	(CAS NO): 7440-44-0	0.055 - 0.15	NOT CLASSIFIED

### SECTION 4: FIRST AID MEASURES



4.1. DESCRIPTION OF FIRST AID MEASURES:

FIRST-AID MEASURES AFTER INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION.  
IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

FIRST-AID MEASURES AFTER SKIN CONTACT:

FLUSH WITH WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION IF  
IRRITATION DEVELOPS OR PERSISTS.

FIRST-AID MEASURES AFTER EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH WATER AND CONTINUE WASHING FOR AT LEAST  
15 MINUTES. OBTAIN MEDICAL ATTENTION IF DISCOMFORT PERSISTS.

FIRST-AID MEASURES AFTER INGESTION:  
DO NOT INDUCE VOMITING. GET IMMEDIATE MEDICAL ATTENTION.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

SYMPTOMS/INJURIES AFTER INHALATION:  
SHORT-TERM (ACUTE) OVEREXPOSURE TO THE GASES, FUMES, AND DUSTS MAY INCLUDE IRRITATION OF THE EYES, LUNGS, NOSE, AND THROAT. SOME TOXIC GASES ASSOCIATED WITH WELDING MAY CAUSE PULMONARY EDEMA, ASPHYXIATION, AND DEATH.

ACUTE OVEREXPOSURE MAY INCLUDE SIGNS AND SYMPTOMS SUCH AS WATERY EYES, NOSE AND THROAT IRRITATION, HEADACHE, DIZZINESS, DIFFICULTY IN BREATHING, FREQUENT COUGHING, OR CHEST PAIN. THE PRESENCE OF CHROMIUM/CHROMATE IN FUME CAN CAUSE IRRITATION OF NASAL MEMBRANES AND SKIN. THE PRESENCE OF NICKEL COMPOUNDS IN FUME CAN CAUSE METALLIC TASTE, NAUSEA, TIGHTNESS OF CHEST, FEVER, AND ALLERGIC REACTION. EXCESSIVE INHALATION OR INGESTION OF MANGANESE CAN PRODUCE MANGANESE POISONING. OVEREXPOSURE TO MANGANESE COMPOUNDS MAY AFFECT THE CENTRAL NERVOUS SYSTEM, SYMPTOMS OF WHICH ARE LANGUOR, SLEEPINESS, MUSCULAR WEAKNESS, EMOTIONAL DISTURBANCES, AND SPASTIC GAIT RESEMBLING PARKINSONISM. THESE SYMPTOMS CAN BECOME PROGRESSIVE AND PERMANENT IF NOT TREATED. EXCESSIVE INHALATION OF FUMES MAY CAUSE "METAL FUME FEVER" WITH FLU-LIKE SYMPTOMS SUCH AS CHILLS, FEVER, BODY ACHES, VOMITING, SWEATING, ETC.

DUSTS MAY CAUSE IRRITATION.

SYMPTOMS/INJURIES AFTER SKIN CONTACT: CAUSES EYE IRRITATION.

SYMPTOMS/INJURIES AFTER EYE CONTACT:  
NOT AN ANTICIPATED ROUTE OF EXPOSURE DURING NORMAL PRODUCT HANDLING. MAY BE HARMFUL IF INGESTED.

SYMPTOMS/INJURIES AFTER INGESTION:

4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: NO ADDITIONAL INFORMATION AVAILABLE

## SECTION 5: FIREFIGHTING MEASURES



5.1. EXTINGUISHING MEDIA:

SUITABLE EXTINGUISHING MEDIA:  
USE EXTINGUISHING MEDIA APPROPRIATE FOR SURROUNDING FIRE.

UNSUITABLE EXTINGUISHING MEDIA: NONE.

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

FIRE HAZARD: NOT FLAMMABLE.  
EXPLOSION HAZARD: NONE KNOWN.

5.3. ADVICE FOR FIREFIGHTERS:

PROTECTION DURING FIREFIGHTING:  
FIREFIGHTERS SHOULD WEAR FULL PROTECTIVE GEAR.

## SECTION 6: ACCIDENTAL RELEASE MEASURES



6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

6.1.1. FOR NON-EMERGENCY PERSONNEL: NO ADDITIONAL INFORMATION AVAILABLE

6.1.2. FOR EMERGENCY RESPONDERS: NO ADDITIONAL INFORMATION AVAILABLE

6.2. ENVIRONMENTAL PRECAUTIONS: AVOID RELEASE TO THE ENVIRONMENT.

### 6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

FOR CONTAINMENT: NO SPECIAL MEASURES REQUIRED.

METHODS FOR CLEANING UP:

ATTEMPT TO RECLAIM THE PRODUCT, IF THIS IS POSSIBLE.

### 6.4. REFERENCE TO OTHER SECTIONS: NO ADDITIONAL INFORMATION AVAILABLE

## SECTION 7: HANDLING AND STORAGE



### 7.1. PRECAUTIONS FOR SAFE HANDLING:

PRECAUTIONS FOR SAFE HANDLING:

AVOID GENERATING DUST. AVOID INHALING WELDING FUMES.

### 7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

STORAGE CONDITIONS: NO SPECIAL STORAGE NECESSARY.

### 7.3. SPECIFIC END USE(S): FOR WELDING CONSUMABLES AND RELATED PRODUCTS

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION



### 8.1. CONTROL PARAMETERS:

NICKEL (7440-02-0):

USA ACGIH:

ACGIH TWA (MG/M3): 1.5 MG/M3

USA OSHA:

OSHA PEL (TWA) (MG/M3): 1 MG/M3

SILICON (7440-21-3):

USA OSHA:

OSHA PEL (TWA) (MG/M3): 5 MG/M3

MANGANESE (7439-96-5):

USA ACGIH:

ACGIH TWA (MG/M3): 0.1 MG/M3

USA OSHA:

OSHA PEL (CEILING) (MG/M3): 5 MG/M3

ALUMINUM (7429-90-5):

USA ACGIH:

ACGIH TWA (MG/M3): 1 MG/M3

USA OSHA:

OSHA PEL (TWA) (MG/M3): 5 MG/M3

COPPER (7440-50-8):

USA ACGIH:

ACGIH TWA (MG/M3): 0.2 MG/M3

USA OSHA:

OSHA PEL (TWA) (MG/M3): 1 MG/M3

### 8.2. EXPOSURE CONTROLS:

APPROPRIATE ENGINEERING CONTROLS:

LOCAL EXHAUST AND GENERAL VENTILATION MUST BE ADEQUATE TO MEET EXPOSURE STANDARDS.

HAND PROTECTION: WEAR WELDING GLOVES.

EYE PROTECTION:

WEAR HELMET OR FACE SHIELD WITH FILTER LENS OF APPROPRIATE SHADE NUMBER. SEE ANSI/ASC Z49.1 SECTION 4.2. PROVIDE PROTECTIVE SCREENS AND FLASH GOGGLES, IF NECESSARY, TO SHIELD OTHERS.

SKIN AND BODY PROTECTION:

WEAR HEAD AND BODY PROTECTION, WHICH HELP TO PREVENT INJURY FROM RADIATION, SPARKS, FLAME AND ELECTRICAL SHOCK. SEE ANSI Z49.1. AT A MINIMUM THIS INCLUDES WELDER'S GLOVES AND A PROTECTIVE FACE SHIELD, AND MAY INCLUDE ARM PROTECTORS, APRONS, HATS, SHOULDER PROTECTION, AS WELL AS DARK SUBSTANTIAL CLOTHING. TRAIN THE EMPLOYEE NOT TO TOUCH LIVE ELECTRICAL PARTS AND TO INSULATE HIM/HERSELF FROM WORK AND GROUND. WELDERS SHOULD NOT WEAR SHORT SLEEVE SHIRTS OR SHORT PANTS.

RESPIRATORY PROTECTION:

IF EXPOSURE LIMITS ARE EXCEEDED OR IRRITATION IS EXPERIENCED, NIOSH APPROVED RESPIRATORY PROTECTION SHOULD BE WORN.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES



### 9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL STATE: SOLID

APPEARANCE: RODS OR WIRE

COLOR: METALLIC

ODOR: NO DATA AVAILABLE

ODOR THRESHOLD: NO DATA AVAILABLE

PH: NO DATA AVAILABLE

RELATIVE EVAPORATION RATE (BUTYLACETATE=1): NO DATA AVAILABLE

MELTING POINT: NO DATA AVAILABLE

FREEZING POINT: NO DATA AVAILABLE

BOILING POINT: NO DATA AVAILABLE

FLASH POINT: NO DATA AVAILABLE

SELF IGNITION TEMPERATURE: NO DATA AVAILABLE

DECOMPOSITION TEMPERATURE: NO DATA AVAILABLE

FLAMMABILITY (SOLID, GAS): NO DATA AVAILABLE

VAPOUR PRESSURE: NO DATA AVAILABLE

RELATIVE VAPOUR DENSITY AT 20 DEG. C: NO DATA AVAILABLE

RELATIVE DENSITY: NO DATA AVAILABLE

SOLUBILITY: NO DATA AVAILABLE

LOG POW: NO DATA AVAILABLE

LOG KOW: NO DATA AVAILABLE

VISCOSITY, KINEMATIC: NO DATA AVAILABLE

VISCOSITY, DYNAMIC: NO DATA AVAILABLE

EXPLOSIVE PROPERTIES: NO DATA AVAILABLE

OXIDISING PROPERTIES: NO DATA AVAILABLE

EXPLOSIVE LIMITS: NO DATA AVAILABLE

9.2. OTHER INFORMATION: NO ADDITIONAL INFORMATION AVAILABLE

## SECTION 10: STABILITY AND REACTIVITY



10.1. REACTIVITY: NO ADDITIONAL INFORMATION AVAILABLE

10.2. CHEMICAL STABILITY:

THE PRODUCT IS STABLE AT NORMAL HANDLING AND STORAGE CONDITIONS.

10.3. POSSIBILITY OF HAZARDOUS REACTIONS: WILL NOT OCCUR.

10.4. CONDITIONS TO AVOID: NONE.

10.5. INCOMPATIBLE MATERIALS: NONE.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS:

WELDING FUMES AND GASES CANNOT BE CLASSIFIED SIMPLY. THE COMPOSITION AND QUANTITY OF BOTH ARE DEPENDENT UPON THE METAL BEING WELDED, THE PROCESS, PROCEDURE AND WELDING CONSUMABLES USED.

OTHER CONDITIONS WHICH ALSO INFLUENCE THE COMPOSITION AND QUANTITY OF THE FUMES AND GASES TO WHICH WORKERS MAY BE EXPOSED INCLUDE:

COATING ON THE METAL BEING WELDED (I.E. PAINT, PAINTING, GALVANIZING), THE NUMBER OF WELDERS, THE VOLUME OF THE WORK AREA, THE QUALITY AND THE AMOUNT OF VENTILATION, THE POSITION OF THE WELDERS HEAD WITH RESPECT TO THE FUME PLUME, AS WELL AS THE PRESENCE OF CONTAMINANTS IN THE ATMOSPHERE (SUCH AS CHLORINATED HYDROCARBON VAPORS FROM THE CLEANING AND DEGREASING ACTIVITIES).

WHEN AN ELECTRODE IS CONSUMED, THE FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM FROM THE INGREDIENTS LISTED IN SECTION 3. FUME AND GAS DECOMPOSITION, AND NOT THE INGREDIENTS IN THE ELECTRODE, ARE IMPORTANT. THE CONCENTRATION OF A GIVEN FUME OR GAS COMPONENT MAY DECREASE OR INCREASE BY MANY TIMES THE ORIGINAL CONCENTRATION. ALSO, NEW COMPOUNDS NOT IN THE ELECTRODES MAY FORM. DECOMPOSITION PRODUCTS OF NORMAL OPERATION INCLUDE THOSE ORIGINATING FROM THE VOLATILIZATION, REACTION OR OXIDATION OF THE MATERIALS SHOWN IN SECTION 3, PLUS THOSE FROM THE BASE METAL COATING, ETC., AS NOTED ABOVE.

REASONABLE EXPECTED FUME CONSTITUENTS OF THIS PRODUCT WOULD INCLUDE:

COMPLEX OXIDES OF IRON, MANGANESE, SILICON, CHROMIUM, NICKEL, COLUMBIUM, MOLYBDENUM, COPPER, CARBON DIOXIDE, CARBON MONOXIDE, OZONE AND NITROGEN OXIDES. SOME PRODUCTS WILL ALSO CONTAIN ANTIMONY, BARIUM, MOLYBDENUM, ALUMINUM, COLUMBIUM, MAGNESIUM, STRONTIUM, TUNGSTEN, AND OR ZIRCONIUM. FUME LIMIT FOR CHROMIUM, NICKEL AND OR MANGANESE MAY BE REACHED BEFORE LIMIT OF 5 MG/M3 OF GENERAL WELDING FUMES IS REACHED.

GASEOUS REACTION PRODUCTS MAY INCLUDE CARBON MONOXIDE AND CARBON DIOXIDE.

OZONE AND NITROGEN OXIDES MAY BE FORMED BY THE RADIATION FROM THE ARC.

DETERMINE THE COMPOSITION AND QUANTITY OF FUMES AND GASES TO WHICH WORKERS ARE EXPOSED BY TAKING AN AIR SAMPLE FROM INSIDE THE WELDER'S HELMET IF WORN OR IN THE WORKER'S BREATHING ZONE. IMPROVE VENTILATION IF EXPOSURES ARE NOT BELOW LIMITS. SEE ANSI/AWS F1.1, F1.3 AND F1.5, AVAILABLE FROM THE AMERICAN WELDING SOCIETY, 550 N.W. LEJEUNE ROAD, MIAMI, FL 33126.

## SECTION 11: TOXICOLOGICAL INFORMATION



## 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS:

ACUTE TOXICITY: NOT CLASSIFIED

IRON (7439-89-6):

CARBON (7440-44-0):

LD50 ORAL RAT: &gt;10000 MG/KG

LD50 ORAL RAT: 984 MG/KG

ATE (ORAL): 984.000 MG/KG

NICKEL (7440-02-0):

LD50 ORAL RAT: &gt;9000 MG/KG

SILICON (7440-21-3):

ATE (ORAL): 3160.000 MG/KG

MANGANESE (7439-96-5):

ATE (ORAL): 9000000.000 MG/KG

SKIN CORROSION/IRRITATION: NOT CLASSIFIED

SERIOUS EYE DAMAGE/IRRITATION: NOT CLASSIFIED

RESPIRATORY OR SKIN SENSITISATION: MAY CAUSE AN ALLERGIC SKIN REACTION.

GERM CELL MUTAGENICITY: NOT CLASSIFIED

CARCINOGENICITY: MAY CAUSE CANCER.

NICKEL (7440-02-0):

IARC GROUP: 2B - POSSIBLY CARCINOGENIC TO HUMANS

NATIONAL TOXICOLOGY PROGRAM (NTP) STATUS:

3 - REASONABLY ANTICIPATED TO BE HUMAN CARCINOGEN

REPRODUCTIVE TOXICITY: NOT CLASSIFIED

SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE): NOT CLASSIFIED

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE):

CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

ASPIRATION HAZARD: NOT CLASSIFIED

**SECTION 12: ECOLOGICAL INFORMATION**

## 12.1. TOXICITY:

NICKEL (7440-02-0):

LC50 FISHES 1: &gt;100 MG/L (EXPOSURE TIME: 96 H - SPECIES: BRACHYDANIO RERIO)

EC50 DAPHNIA 1: &gt;100 MG/L (EXPOSURE TIME: 48 H - SPECIES: DAPHNIA MAGNA)

EC50 OTHER AQUATIC ORGANISMS 1:

0.18 MG/L (EXPOSURE TIME: 72 H - SPECIES: PSEUDOKIRCHNERIELLA SUBCAPITATA)

LC50 FISH 2:

1.3 MG/L (EXPOSURE TIME: 96 H - SPECIES: CYPRINUS CARPIO [SEMI-STATIC])

EC50 DAPHNIA 2:

1 MG/L (EXPOSURE TIME: 48 H - SPECIES: DAPHNIA MAGNA [STATIC])

EC50 OTHER AQUATIC ORGANISMS 2:

0.174 - 0.311 MG/L (EXPOSURE TIME: 96 H - SPECIES: PSEUDOKIRCHNERIELLA)



SUBCAPITATA [STATIC])

COPPER (7440-50-8):

LC50 FISHES 1:

0.0068 - 0.0156 MG/L (EXPOSURE TIME: 96 H - SPECIES: PIMEPHALES PROMELAS)

EC50 DAPHNIA 1:

0.03 MG/L (EXPOSURE TIME: 48 H - SPECIES: DAPHNIA MAGNA [STATIC])

EC50 OTHER AQUATIC ORGANISMS 1:

0.0426 - 0.0535 MG/L (EXPOSURE TIME: 72 H - SPECIES: PSEUDOKIRCHNERIELLA  
SUBCAPITATA [STATIC])

LC50 FISH 2:

<0.3 MG/L (EXPOSURE TIME: 96 H - SPECIES: PIMEPHALES PROMELAS [STATIC])

EC50 OTHER AQUATIC ORGANISMS 2:

0.031 - 0.054 MG/L (EXPOSURE TIME: 96 H - SPECIES: PSEUDOKIRCHNERIELLA  
SUBCAPITATA [STATIC])

12.2. PERSISTENCE AND DEGRADABILITY: NO ADDITIONAL INFORMATION AVAILABLE

12.3. BIOACCUMULATIVE POTENTIAL: NO ADDITIONAL INFORMATION AVAILABLE

12.4. MOBILITY IN SOIL: NO ADDITIONAL INFORMATION AVAILABLE

12.5. OTHER ADVERSE EFFECTS: NO ADDITIONAL INFORMATION AVAILABLE

### SECTION 13: DISPOSAL CONSIDERATIONS



13.1. WASTE TREATMENT METHODS:

WASTE DISPOSAL RECOMMENDATIONS:

DISPOSE OF CONTENTS/CONTAINER IN ACCORDANCE WITH LOCAL/REGIONAL/NATIONAL/  
INTERNATIONAL REGULATIONS.

### SECTION 14: TRANSPORT INFORMATION



IN ACCORDANCE WITH DOT / ADR / RID / ADNR / IMDG / ICAO / IATA:

14.1. UN NUMBER: NOT A DANGEROUS GOOD IN SENSE OF TRANSPORT REGULATIONS

14.2. UN PROPER SHIPPING NAME: NOT APPLICABLE

### SECTION 15: REGULATORY INFORMATION



15.1. US FEDERAL REGULATIONS:

IRON (7439-89-6):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY

NICKEL (7440-02-0):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY  
LISTED ON SARA SECTION 313 (SPECIFIC TOXIC CHEMICAL LISTINGS)

SARA SECTION 313 - EMISSION REPORTING: 0.1%

SILICON (7440-21-3):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY

MANGANESE (7439-96-5):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY  
LISTED ON SARA SECTION 313 (SPECIFIC TOXIC CHEMICAL LISTINGS)

SARA SECTION 313 - EMISSION REPORTING: 1.0%

CARBON (7440-44-0):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY

ALUMINUM (7429-90-5):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY

LISTED ON SARA SECTION 313 (SPECIFIC TOXIC CHEMICAL LISTINGS)

SARA SECTION 313 - EMISSION REPORTING: 1.0% (DUST OR FUME ONLY)

COPPER (7440-50-8):

LISTED ON THE UNITED STATES TSCA (TOXIC SUBSTANCES CONTROL ACT) INVENTORY

LISTED ON SARA SECTION 313 (SPECIFIC TOXIC CHEMICAL LISTINGS)

SARA SECTION 313 - EMISSION REPORTING: 1.0%

#### 15.2. US STATE REGULATIONS:

NICKEL (7440-02-0):

U.S. - CALIFORNIA - PROPOSITION 65 - CARCINOGENS LIST: YES

U.S. - CALIFORNIA - PROPOSITION 65 - DEVELOPMENTAL TOXICITY:

U.S. - CALIFORNIA - PROPOSITION 65 - REPRODUCTIVE TOXICITY - FEMALE:

U.S. - CALIFORNIA - PROPOSITION 65 - REPRODUCTIVE TOXICITY - MALE:

NO SIGNIFICANCE RISK LEVEL (NSRL):

NICKEL (7440-02-0):

U.S. - MASSACHUSETTS - RIGHT TO KNOW LIST U.S. - MINNESOTA - HAZARDOUS

SUBSTANCE LIST U.S. - NEW JERSEY - RIGHT TO KNOW HAZARDOUS SUBSTANCE

LIST U.S. - PENNSYLVANIA - RTK (RIGHT TO KNOW) LIST

SILICON (7440-21-3):

U.S. - MASSACHUSETTS - RIGHT TO KNOW LIST U.S. - MINNESOTA - HAZARDOUS

SUBSTANCE LIST U.S. - NEW JERSEY - RIGHT TO KNOW HAZARDOUS SUBSTANCE

LIST U.S. - PENNSYLVANIA - RTK (RIGHT TO KNOW) LIST

MANGANESE (7439-96-5):

U.S. - MASSACHUSETTS - RIGHT TO KNOW LIST U.S. - MINNESOTA - HAZARDOUS

SUBSTANCE LIST U.S. - NEW JERSEY - RIGHT TO KNOW HAZARDOUS SUBSTANCE

LIST U.S. - PENNSYLVANIA - RTK (RIGHT TO KNOW) LIST

ALUMINUM (7429-90-5):

U.S. - MASSACHUSETTS - RIGHT TO KNOW LIST U.S. - MINNESOTA - HAZARDOUS

SUBSTANCE LIST U.S. - NEW JERSEY - RIGHT TO KNOW HAZARDOUS SUBSTANCE

LIST U.S. - PENNSYLVANIA - RTK (RIGHT TO KNOW) LIST

COPPER (7440-50-8):

U.S. - MASSACHUSETTS - RIGHT TO KNOW LIST U.S. - MINNESOTA - HAZARDOUS

SUBSTANCE LIST U.S. - NEW JERSEY - RIGHT TO KNOW HAZARDOUS SUBSTANCE

LIST U.S. - PENNSYLVANIA - RTK (RIGHT TO KNOW) LIST

## SECTION 16: OTHER INFORMATION



### OTHER INFORMATION:

WE BELIEVE THAT THE INFORMATION CONTAINED HEREIN IS CURRENT AS OF THE DATE OF THIS SDS. AS THE CONDITION OR METHODS OF USE ARE BEYOND GRAINGER GLOBAL SOURCING CONTROL. GRAINGER GLOBAL SOURCING DOES NOT ASSUME ANY RESPONSIBILITY AND EXPRESSLY DISCLAIM ANY LIABILITY FOR ANY USE OF THIS MATERIAL. INFORMATION CONTAINED HEREIN IS BELIEVED TO BE TRUE AND ACCURATE BUT ALL STATEMENTS OR SUGGESTIONS ARE MADE WITHOUT ANY WARRANTY, EXPRESSED OR IMPLIED, REGARDING THE ACCURACY OF THE INFORMATION, THE HAZARD CONNECTED WITH THE USE OF THIS MATERIAL OR THE RESULTS TO BE OBTAINED FOR USE THEREOF. IT IS THE USER'S OBLIGATION TO DETERMINE THE CONDITIONS OF SAFE USE OF THESE PRODUCTS.

## FULL TEXT OF H-PHRASES:

ACUTE TOX. 4 (ORAL): ACUTE TOXICITY (ORAL), CATEGORY 4

## AQUATIC ACUTE 1:

HAZARDOUS TO THE AQUATIC ENVIRONMENT - ACUTE HAZARD, CATEGORY 1

## AQUATIC CHRONIC 3:

HAZARDOUS TO THE AQUATIC ENVIRONMENT - CHRONIC HAZARD, CATEGORY 3

CARC. 1B: CARCINOGENICITY, CATEGORY 1B

SKIN SENS. 1: SENSITISATION - SKIN, CATEGORY 1

STOT RE 1: SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE, CATEGORY 1

H302: HARMFUL IF SWALLOWED

H317: MAY CAUSE AN ALLERGIC SKIN REACTION

H350: MAY CAUSE CANCER

H372: CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE

H400: VERY TOXIC TO AQUATIC LIFE

H412: HARMFUL TO AQUATIC LIFE WITH LONG LASTING EFFECTS

## NFPA:

NFPA HEALTH HAZARD 1 - EXPOSURE COULD CAUSE IRRITATION BUT ONLY MINOR  
RESIDUAL INJURY EVEN IF NO TREATMENT IS GIVEN.

NFPA FIRE HAZARD 0 - MATERIALS THAT WILL NOT BURN.

NFPA REACTIVITY 0 - NORMALLY STABLE, EVEN UNDER FIRE EXPOSURE  
CONDITIONS, AND ARE NOT REACTIVE WITH WATER.

## HMIS III RATING:

HEALTH 2 MODERATE HAZARD - TEMPORARY OR MINOR INJURY MAY OCCUR

FLAMMABILITY 0 MINIMAL HAZARD

PHYSICAL 0 MINIMAL HAZARD

17/11/2014

EN (ENGLISH)