



MATERIAL SAFETY DATA SHEET

PRODUCT: Gouge Tech Lightening Rod

PREPERATION DATE: 2/16/2011

REVISION DATE: 2/23/2011

SECTION 1: PRODUCT IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Gouge Tech Lightening Rod

SYNONYMS: Hollow Carbon Arc Electrode

PART #: GT532X12, GT316X12, GT14X12, GT516X12, GT38X12, GT12X12, GTJ38X17, GTJ58X17, GTJ12X17, GTJ34X17, GTJ1X17

COMPANY: Flame Technologies Inc.

ADDRESS: 703 Cypress Creek Road
Cedar Park, TX 78613

EMERGENCY PHONE: (800)749-3682 / (512)219-8481

FAX PHONE: (512)219-8477

PRODUCT USE: These carbon electrodes are a non-filler metal electrode used in arc welding and cutting, consisting of a carbon or graphite hollow rod coated with copper.

SECTION 2: COMPOSITION AND INFORMATION ON COMPONENTS

INGREDIENT:	RANGE(%)	CAS NO.	OSHA PEL	ACGIH TLV
Graphite, Synthetic	20-90*	7440-44-0	5mg/M3	3.5mg/M3
Graphite, Natural	20-90*	7782-42-5	15mppcf	2.5mg/M3
Copper	10-30	7440-50-8	0.1 mg/M3	0.1mg/M3 (fume)

NOTE: Information for welding fume 5mg/M3.

Qualitative analysis detected no trace of cadmium or mercury.

*Batch percentages vary greatly depending upon availability.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Health and physical hazards associated with carbon arc electrodes are attributed to the fumes generated when the electrodes are used and consumed, the dangers of electric shock (which can kill you), and arc rays. Also be aware of the noise level from arc welding.

ROUTES OF ENTRY:

EYES: Dust may cause eye irritation

SKIN: Dust may cause skin irritation

INGESTION: Not known

INHALATION: Dust is suspected as being possible inhalation hazard.

U.V. EXPOSURE: Ultraviolet arc rays may cause eye and skin irritation.

ACUTE HEALTH HAZARDS: Fume hazards include bronchitis, lung deposits and tissue damage which may be irreversible. U.V. hazards include keratoconjunctivitis (causing inflammation and blurred vision), headache, and "sunburn." Some toxic gases associated with welding may cause pulmonary edema, asphyxiation, and death. Copper fumes may cause metal fume fever.

CHRONIC HEALTH HAZARDS: Long term exposure to welding and allied processes gases, dusts, and fumes may contribute to pulmonary irritation or pneumoconiosis. Overexposure to copper fumes may lead to copper poisoning, resulting in hemolytic anemia and liver, kidney, and spleen damage. The base material will also emit fumes and gases which may be hazardous. Some base material may contain the elements manganese, iron, nickel, and chromium. Overexposure to one or more of these elements are known to cause health problems.

SIGNS AND SYMPTOMS OF EXPOSURE: Breathing difficulty, headache, nausea, dryness or irritation of nose, throat, and eyes. Unconsciousness.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Respiratory problems, eurythmas

TOXICITY: Carbon: intravenous, mouse; LD50; 440Mg/Kg. Copper (fume): oral, human: LDLo: 120ug/kg.

REPRODUCTION: Carbon: subcutaneous, rat; TDLo: 167Mg/Kg (8D preg). Copper, oral, rat: TDLo: 1520ug/Kg (22w pre) TDLo: 1210ug/Kg (35w pre)



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CARCINOGENICITY:

Black Carbon: IARC-2B possibly carcinogenic to humans; NIOSH-Ca potential occupational carcinogen, with no further categorization; TLV-A4 not classifiable as a human carcinogen (but cause for concern).

SECTION 4: FIRST AID AND MEASURES

EYES: In case of contact, immediately flush eyes with copious amounts of flowing water for at least 15 minutes, retracting eyelids often. Get medical attention immediately. Contact lenses should not be worn when working with this product.

SKIN: Wash skin thoroughly with mild soap and water. Flush with warm water for 15 minutes.

INGESTION: Not known, get medical attention immediately.

INHALATION: If large amounts of the dust are inhaled, move the exposed person to fresh air at once. If the symptoms persist contact a physician.

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS: IN AIR, UPPER: Not Applicable
(% BY VOLUME) LOWER: Not Applicable

FLASH POINT: Not known, very high

AUTOIGNITION TEMPERATURE: Not Applicable

NFPA HAZARD CLASSIFICATION

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

WHMIS CLASSIFICATION

CLASS: "D"

DIVISION: "2"

SUB DIVISION: "B"

GENERAL HAZARD: Not Applicable

FIRE-FIGHTING INSTURCTIONS: Treat the surrounding fire; this product is non-burning

EXTINGUISHING MEDIA: Non-burning. See NFPA 51B "Standard for Fire Prevention During Welding, Cutting and other Hot Work" published by the National Fire Protection association for additional fire prevention and protection information.

HAZARDOUS COMBUSTION PRODUCTS: None known

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: This product is not subject to "accidental release" in the form of normal use.

LAND SPILL: Sweep or pick up. Be alert to "hot ends."

WATER SPILL: Electrodes exposed to moisture may explode violently if used. Dry moist rods by baking at 300 degrees Fahrenheit for ten hours.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: Wash thoroughly after handling. Store in the containers in which the product is shipped, tightly sealed and in a dry area.

OTHER PRECAUTIONS: Read and understand: "American National Standard Z49.1"; subpart Q of OSHA 29 CFR 1910.252; "Safety in Welding and Cutting" by the American Welding Society.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS/CAUTION: Use in confined areas can result in carbon monoxide poisoning/death. An Air supplied respirator is recommended when product is used indoors.

VENTILATION: Local mechanical exhaust as required to reduce fumes generated by each specific application below ACGIH TLV.

RESPRATORY PROTECTION: Air supplied or fume respirator should be used if ventilation is insufficient. For the occasional breaking of a rod, which might require scoring, the surface to get a clean break, protection is not needed. But if some large number of rods were going to be broken this way, then such an operation should be done in a chemical fume hood with exhaust.

EYE PROTECTION: Face shield or welders helmet with #12 or darker lens. ANSI 87.1 approved safety glasses with side shield when sharpening these rods.

EAR PROTECTION: Hearing protection required. Noise levels should be monitored. If sound levels exceed TLV's for noise (85 dBA for 8 hr. TWA, or C-weighted peak level of 140 dB, see 29 CFR 1910), hearing protection must be worn.

ACGIH TLVS for Noise duration per day:

Hours	24	16	8	4	2	1			
Level dBA	80	82	85	88	91	94			
Minutes	30	15	7.5	3.75	1.88	0.94			
Level dBA	97	100	103	106	109	112			
Seconds	28.1	14.1	7.0	3.5	1.8	0.88	0.44	0.22	0.11
Level dBA	115	118	121	124	127	130	133	136	139

GLOVES: Welding gloves

FOOTWEAR: Suitable for metal working

CLOTHING: Wear appropriate clothing for body protection to prevent injury from radiation, sparks, and electrical shock. This may include arm protectors, aprons, hats, shoulder protection, as well as dark substantial clothing.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Air sampling to determine corrective measures.

WORK/HYGIENIC PRACTICES: Operator trained to avoid electrical shock and U.V. ray exposure. Avoid inhalation of vapors. Avoid contact to eyes, skin and mucous membranes. Do not smoke, eat, drink, chew gum or tobacco, or apply cosmetics within the working area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Brownish and black Rod

ODOR: No notable odor

PHYSICAL STATE: Solid

pH AS SUPPLIED: Not Applicable

BOILING POINT:

F: 5432° Min.

C: 3000° Min.

MELTING POING: Not Available

FREEZING POINT: Not Applicable

SOLUBILITY IN WATER: Not Soluble

VAPOR PRESSURE: Not Applicable

SPECIFIC GRAVITY: Not Applicable

VAPOR DENSITY: Not Applicable

EVAPORATION RATE: Not Applicable

CARBON: 98.6% Min.

ASH CONTENT: 59%

WATER: 0.34%

ELECTRICAL RESISTANCE: 17.1-18.7

DENSITY: 1.57 g/cm³

BREAKING STRENGTH: 28.0Mpa

THICKNESS OF COPPER LAYER: 0.07~0.12mm



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SECTION 10: STABILITY AND REACTIVITY

STABILITY: The product is stable under normal use conditions.

REACTIVITY: This material is not reactive.

CONDITIONS TO AVOID (STABILITY): Heat, sparks, flames, and other ignition sources; avoid heating above 290°C.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizers, fluorine, and peroxides.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Fumes and gases from carbon arc gouging cannot be simply classified. The composition and quantity of both are dependent upon the material being worked, the process, procedures and consumables used. For normal use the expected by-products include a complex of the oxides of the materials listed in Section 2, along with carbon monoxide, carbon dioxide, (ozone, nitrogen oxide, and nitrogen dioxide from the electric arc and U.V. rays).

Material	CAS No.	ACGIH TLV		OSHA-PEL	
		TWA(ppm)	STEL(ppm)	TWA(ppm)	STEL(ppm)
Carbon Dioxide	124-38-9	5000	30,000	5000	N/A
Carbon Monoxide	630-08-0	25	N/A	50	N/A
Nitrogen Dioxide	10102-44-0	3	5	N/A	5
Nitrous Oxide	10024-97-2	50	N/A	N/A	N/A
Ozone	10028-15-6	0.05(heavy work)	N/A	0.1	N/A
Welding Fume	N/A	5 mg/m ³	N/A	N/A	N/A

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: No data available.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: All recovered material should be packaged, transported, and disposed of using good engineering practices. Disposal method must be in compliance with local, state, and federal regulations regarding health, air, and water pollution.

RCRA HAZARD CLASS: It is the responsibility of the user to determine if this material is a RCRA Hazardous Waste at the time of disposal.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: No Information

WATER TRANSPORTATION: No Information

AIR TRANSPORTATION: No Information



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SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): All components are listed on TSCA section 8(b)

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): None. We recommend that you contact local authorities for other reporting requirements.

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):

311/312 HAZARD CATEGORIES: Acute and Chronic

313 REPORTABLE INGREDIENTS:

CAS NUMBER: 7440-50-8

CHEMICAL NAME: Copper

%, <30

STATE REGULATIONS: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer.(California Health & Safety Code §25249.5 et seq.) We recommend that you contact local authorities for other reporting requirements.

INTERNATIONAL REGULATIONS: None. We recommend that you contact local authorities for other reporting requirements.

SECTION 16: OTHER INFORMATION

REFERENCES:

"Chemical Guide to OSHA Hazard Communication Standard" First Edition

"Handbook of Toxic and Hazardous Chemicals and Carcinogens" Second Edition

"Registry of Toxic Effects of Chemical Substances"

"NIOSH Pocket Guide to Chemical Hazards" June 1994

PREPARATION INFORMATION: By: David Kowal

Date: February 16, 2011

DISCLAIMER: Read this MSDS before use or disposal of this product. Pass along the information to employees and any other persons who could be exposed to the product to be sure that they are aware of the information before use or other exposure. This MSDS has been prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200). Information presented herein has been compiled from source considered to be accurate and dependable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be constructed as recommending any practice or any product in violation of any law or regulation. It is the user's responsibility to determine the suitability of any material for a specific purpose and to adopt such safety precautions as necessary. Since conditions of use are not under our control, we must disclaim all liability with respect to the use and disposal of our products.