



AURA METALS LTD

BRONZE MATERIAL SAFETY DATA SHEET

REVISION NUMBER: 06

PAGE 1 OF 5

REVISION DATE: 14.11.11

REF: MSDS COPPER ALLOYS BRONZE

REACH REGISTRATION COPPER BY 2013
TIN BY 2018
LEAD BY 2018
ZINC BY 2018

1. IDENTIFICATION OF THE SUBSTANCE:

PRODUCT NAME: GUNMETAL, RED BRASS, LEAD BRONZE

PRODUCT DESCRIPTION: INGOTS, BAR, CONCAST SECTIONS

<u>SUBSTANCE</u>	<u>CAS – NO.</u>	<u>EC NO:</u>	<u>CHEM SYMBOL:</u>	<u>CLP</u>
COPPER	7440 50 -08	231-159-6	Cu	02-2119783616-26-0000
TIN	7440-31-5	231-141-8	Sn	02-2119765858-16-0000
LEAD	7439-92-1	231-100-4	Pb	02-2119765859-14-0000
ZINC	7440-66-6	231-175-3	Zn	02-2119765846-25-0000

SUPPLIER:

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EMERGENCY INFORMATION:

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2. COMPOSITION & INFORMATION ON INGREDIENTS

THIS DATA SHEET APPLIES TO COPPER BASED ALLOYS FOR REMELTING, AS TYPIFIED BY BRITISH STANDARDS 1400:1985, SUPPLIED TO AN ORDER SPECIFICATION/CERTIFICATE OF ANALYSIS, WHICH MUST BE READ IN CONJUNCTION WITH THIS DOCUMENT.

THE MAXIMUM PROPORTIONS OF THE MAIN ALLOYING ELEMENTS FOR COPPER BASED ALLOYS AND RELEVANT OCCUPATIONAL EXPOSURE STANDARDS ARE:

ALLOYING AGENT	MAXIMUM PROPORTION	EIGHT HOUR WEIGHTED AVERAGE (TWA) PUBLISHED OCTOBER 2007
COPPER	75 -95%	0.2 mg/m ³ FUME 1.0 mg/m ³ DUST (2 mg/m ³ - 10 MIN TWA)
PHOSPHORUS	1%	AS P205 1 mg/m ³
ZINC	15%	5.0 mg/m ³ (10 mg/m ³ - 10 MIN TWA)
TIN	12%	2.0 mg/m ³ (4 mg/m ³ - 10 MIN TWA)
LEAD	22%	0.15% mg/m ³
NICKEL	6%	0.5 mg/m ³
MANGANESE	0.5%	1 mg/m ³ FUME (3 mg/m ³ - 10 MIN TWA) 5 mg/m ³ DUST
CHROMIUM	0.5%	0.5 mg/m ³ (CHROMIUM V1 - 0.05% mg/m ³)
ANTIMONY	1%	0.5 mg/m ³
ARSENIC	1%	0.2% mg/m ³
IRON	1%	5 mg/m ³ FUME (10 mg/m ³ - 10 MIN TWA)
SILICON	1%	10 mg/m ³ TOTAL INHALEABLE DUST 5 mg/m ³ TOTAL RESPIRABLE DUST

THE EXTENT TO WHICH THESE SUBSTANCES ARE LIABLE TO BE PRESENT IN AIR DEPENDS UPON THE PURCHASE SPECIFICATION AND PRODUCTION METHODS WHICH MUST BE CONSIDERED CAREFULLY BY THE USER AS PART OF THE ASSESSMENT OF RISK TO HEALTH - SEE HAZARDS, PAGE 1.

3. HAZARDS IDENTIFICATION

MOST IMPORTANT HAZARD: WEIGHT OF PRODUCTS MUST BE DETERMINED BEFORE ATTEMPTING MANUAL AND MECHANICAL HANDLING.

SPECIFIC HAZARDS: TAKE CARE TO PREVENT CONTACT WITH SHARP EDGES AND CORNERS BY USING SUBSTANTIAL GLOVES AND OVERALLS.

ENSURE THAT PRODUCTS ARE SAFELY STACKED TO PROVIDE STABILITY IN DRY CONDITIONS.

4. FIRST AID MEASURES

GENERAL ADVICE: CONTINGENCY ARRANGEMENTS FOR DEALING WITH CASES OF MOLTEN METAL BURNS AND ACUTE RESPIRATORY IRRITATION MUST BE ESTABLISHED IN COMPLIANCE WITH THE FIRST AID AT WORK REGULATIONS. PATIENTS MUST BE REMOVED FROM THE SOURCE OF RISK AS SOON AS POSSIBLE AND SPECIALIST MEDICAL ASSISTANCE SOUGHT URGENTLY.

5. FIRE HAZARDS & FIRE FIGHTING PROCEDURES

FLASH POINT: NOT DETERMINED

AUTOIGNITION TEMPERATURE: NOT DETERMINED

EXPLOSION LIMITS: LOWER NOT DETERMINED, UPPER NOT DETERMINED.

SOLID PRODUCTS DO NOT PRESENT A FIRE AND EXPLOSION HAZARD WHEN STORED AND HANDLED.

APPROVED FACE, EYE, BODY AND FOOT PROTECTION ARE REQUIRED FOR ALL EMPLOYEES LIABLE TO COME INTO CONTACT WITH MOLTEN METALS.

MOLTEN METAL EXPLOSIONS COULD FORESEEABLY OCCUR IF DAMP OR CONTAMINATED ALLOYS ARE ADDED TO THE MELT. PRODUCTS MUST BE STORED IN DRY CONDITIONS AND BE CHECKED FOR DAMPNES, PARTICULARLY IN CRACKS AND FISSURES, BEFORE USE. IT IS RECOMMENDED THAT PRODUCTS ARE PREHEATED TO EXPEL ALL MOISTURE BEFORE LOADING INTO THE FURNACE.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: AVOID CONTACT WITH SKIN, EYES & CLOTHING. GOGGLES GIVING COMPLETE PROTECTION TO EYES. EYEWASH BOTTLE WITH CLEAN WATER.

ENVIRONMENTAL PRECAUTIONS: PREVENT PRODUCT ENTERING DRAINS. IF SUBSTANCE HAS ENTERED A WATERCOURSE OR SEWER, ADVISE POLICE.

METHODS FOR CLEANING UP: SWEEP UP SPILLED SUBSTANCE, BUT AVOID MAKING DUST. REMOVE TO SAFE PLACE. CONTACT WASTE DISPOSAL SERVICES.

7. HANDLING & STORAGE

HANDLING: AVOID BREATHING THE DUST. WASH HANDS BEFORE BREAKS AND IMMEDIATELY AFTER HANDLING THE PRODUCT. ENSURE EYE WASH BOTTLE WITH CLEAN WATER IS READILY AVAILABLE.

STORAGE: STORE IN ORIGINAL CONTAINER.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CHEMICAL NAME: SEE PART 1 ABOVE

NATIONAL OCCUPATIONAL EXPOSURE LIMITS: SEE PART 2 ABOVE

PRODUCT – OCCUPATIONAL EXPOSURE STANDARD:
PERSONAL PROTECTION EQUIPMENT:

- S22 RESPIRATORY PROTECTION: AVOID INHALATION. PROVIDE ADEQUATE VENTILATION.
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- S27/28 HAND PROTECTION: AVOID CONTACT WITH SKIN. WATER SUITABLE GLOVES AND EYE /FACE PROTECTION.
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- S39 EYE PROTECTION: AVOID CONTACT WITH EYES. GOGGLES GIVING COMPLETE PROTECTION TO EYES. EYEWASH BOTTLE WITH CLEAN WATER.

S27/28 SKIN & BODY PROTECTION: WASH OFF IMMEDIATELY WITH SOAP AND PLENTY OF WATER. AVOID CONTACT WITH SKIN, EYES AND CLOTHING
CHEMICAL NAME: SEE PART 2 ABOVE

9. PHYSICAL AND CHEMICAL PROPERTIES

APPROXIMATE DENSITY 20°C	8.9 ± 1.5
MELTING POINT:	900 - 1300°C
WATER SOLUBILITY:	NOT DETERMINED

10. STABILITY AND REACTIVITY

STABILITY: STABLE AT NORMAL CONDITIONS

11. TOXICOLOGICAL COMPOSITION

R20 INHALATION: INHALATION OF DUST MAY CAUSE NAUSEA.
R36/R38 SKIN CONTACT: MAY CAUSE EYE OR SKIN IRRITATION WITH SUSCEPTIBLE PERSONS.
R36 EYE CONTACT: MAY CAUSE EYE IRRITATION WITH SUSCEPTIBLE PERSONS.
R22 INGESTION: MAY BE HARMFUL IF SWALLOWED

12. ECOLOGICAL INFORMATION

BIO DEGRADABILITY:	NOT BIODEGRADABLE.
BIOACCUMULATION:	THIS PRODUCT HAS THE POTENTIAL TO BIO ACCUMULTE.
MOBILITY:	NO DATA AVAILABLE.
WATER SOLUBILITY:	NOT WATER-SOLUBLE.

13. DISPOSAL CONSIDERATIONS

WASTE:	ENSURE CONFORMANCE WITH LOCAL AND NATIONAL REGULATIONS.
PACKAGING:	LABLES SHOULD NOT BE REMOVED FROM CONTAINERS UNTIL THEY HAVE BEEN CLEANED. EMPTY CONTAINERS
MAY CONTAIN HAZARDOUS	RESIDUES. ENSURE CONFORMANCE WITH LOCAL AND NATIONAL REGULATIONS.

14. TRANSPORT INFORMATION

UN PROPER SHIPPING NAME:	NOT CLASSIFIED
AOR/RID – DESCRIPTION:	NOT CLASSIFIED
IM DG – PROPER SHIPPING NAME:	NOT CLASSIFIED

15. REGULATORY INFORMATION

CLASSIFICATION ACCORDING TO EUROPEAN DIRECTIVE ON CLASSIFICATION OF HAZARDOUS PREPARATIONS 90/492/EEC.
CLASSIFICATION, LABELING AND PACKAGING REGULATIONS.

UK REGULATIONS:-

CONTROL OF POLLUTION ACT 1974
CONTROL OF POLLUTION (SPECIAL WASTES) REGULATIONS 1980 SI 1709.
THE CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH REGULATIONS 1988 (AS AMENDED).
DANGEROUS SUBSTANCES (NOTIFICATION AND MARKING OF SITES) REGULATIONS 1990 SI 304.
ENVIRONMENTAL PROTECTION ACT 1990 (AMENDED).
ENVIRONMENTAL PROTECTION (DUTY OF CARE) REGULATIONS 1991. (AS AMENDED)
THE CHEMICALS (HAZARD INFORMATION AND PACKAGING) REGULATIONS 1996 (AS AMENDED)
THE CARRIAGE OF DANGEROUS GOODS BY ROAD REGULATIONS 1996/2095 (AS AMENDED)
THE CARRIAGE OF DANGEROUS GOODS (CLASSIFICATION PACKAGING AND LABELLING) AND USE OF TRANSPORTABLE PRESSURE RECEPTION REGULATIONS 1996/2092 (AS AMENDED)
THE CARRIAGE OF DANGEROUS GOODS BY RAIL REGULATIONS 1996/2089 (AS AMENDED).
SPECIAL WASTE REGULATIONS 1996 (AS AMENDED).

16. OTHER INFORMATION

FURTHER INFORMATION: THIS ISSUE OF MSDS/REV 01 OF EFFECTIVE DATE DECEMBER 2010 REVISIONS HAVE BEEN MADE TO SECTION(S): 6 SAFETY CODES ADDED , 5 RISK CODES ADDED.
LAST REVISION DATE: 14th November 2011

THIS SAFETY DATA SHEET CONFORMS TO EU REGULATIONS (ECV) No 190/2006(REACH)

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