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Safety Data Sheet

1 IDENTIFICATION

Product identifier

Trade name: 111 Kastweld Grey Iron Cast

Other means of identification: Cast Iron

SDS # 0003

Recommended use and restriction on use

Recommended use: Metal Soldering Operations

Restrictions on use: No further relevant information available.

Manufacturer/Importer/Supplier/Distributor information

Importer:

Harris Products Group

14 Queensland Rd

Darra, QLD, Australia 4076

(07) 33753670

Safety Data Sheet Questions: sales@hgea.com.au

Website: <http://www.harrisproductsgroup.com.au>

Poisons Information Centre/Helpline (24 hours) Australia 13 11 26

2 HAZARD(S) IDENTIFICATION

GHS classification of the substance/mixture.

Classified according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

The product in solid form is not classified as hazardous according to the Globally Harmonized System (GHS). Dust and fumes from welding, grinding etc. may cause health hazards – classified below:

GHS Classification(s)

- Health – Eye Irritant: Category 2B
- Skin corrosion/irritation: Category 2
- Acute Toxicity Oral & Inhalation: Category 4
- Specific target organ toxicity, single exposure: Category 3

Label elements

Signal word **WARNING**

Hazard pictograms



Hazard Statement(s)

H302 Harmful if swallowed.
H332 Harmful if inhaled
H312 + H332 Harmful in contact with skin or inhaled

Prevention Statement(s):

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well ventilated area.
P270	Do not eat, drink or smoke when using this product.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P264	Wash thoroughly after handling.

Response statement(s):

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. IF
P304 + P340	INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338.	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313.	IF exposed or concerned: Get medical advice/ attention
P310	Immediately call a POISON CENTER or doctor/physician
P321	Specific treatment is advised - see first aid instructions.
P363	Wash contaminated clothing before reuse.

Storage Statement(s): Store Locked Up

Disposal Statement(s): Dispose of contents/container in accordance with relevant regulations.

Other Hazards No information provided

Additional information:**Other hazards which do not result in GHS classification:**

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to brazing fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheets and the precautionary labels before using this product.

Hazard description:

WHMIS-symbols: Not hazardous under WHMIS.

3 Composition/information on ingredients**Chemical characterization: Mixtures**

Description: Mixture: consisting of the following components.

Substances/Mixtures		
CAS	Ingredient	Proportion
7440-44-0	Carbon	2.5
7440-21-3	Silicon	1.0
7439-96-5	Manganese	0.2
7440-02-0	Nickel	0.01
7440-47-3	Chromium	0.01
N/A	Chromium (Hexavalent)	N/A
7439-98-7	Molybdenum	0.01
7704-34-9	Sulphur	0.02
7723-14-0	Phosphorus	0.01
7429-90-5	Aluminium	0.01
7440-32-6	Titanium	0.01
7440-50-8	Copper	0.01
7439-89-6	Iron	86.3

Additional information:

For the listed ingredient(s), the identity and exact percentage(s) are being withheld as a trade secret.

Composition comments:

The term "Dangerous Components" should be interpreted as a term defined in Hazard Communication standards and does not necessarily imply the existence of a hazard. The product may contain additional nonhazardous ingredients or may form additional compounds under the condition of use. Refer to Sections 2 and 8 for more information.

4 First-aid measures**Description of first aid measures****General information:**

EMERGENCY OVERVIEW. This product is in solid form. This product is not reactive under normal circumstances. Emergency responders must wear the proper personal protective equipment suitable for the situation to which they are responding.

Inhalation:

Irritation of the upper respiratory track. Subject that was over exposed should be moved to a fresh air area.

Skin contact:

For skin contact with dusts or powders, wash with soap and water. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.

Eye contact:

For contact with dust or particulates, flush eyes with water. Eye injuries from solid particles should be treated by a trained individual, such as a physician or nurse.

Ingestion:

For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.

Information for doctor: Treat Symptomatically

Most important symptoms and effects, both acute and delayed

Metal particles in the eyes may cause irritation if not removed.

Prolonged or repeated over-exposure to iron oxide produced in grinding or welding may lead to siderosis.

Danger

Brazing hazards are complex and may include physical and health hazards such as but not limited to infrared radiation from flame or hot metal, physical strains, thermal burns due to hot metal or spatter and potential health effects of overexposure to brazing fume or dust. Refer to Section 11 for more information.

5 Fire-fighting measures**Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂). Halons.

Special hazards arising from the substance or mixture

Irritating and toxic gases or fumes may be released during a fire.

Advice for firefighters

Move containers from fire area if you can do so without risk. Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

Additional information:

Read and understand the Work Safe Australia Code of Practice on Welding Processes and "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" before using this product. Section 274 of the Work Health and Safety Act (the WHS Act.)

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Accidental release measures do not apply to solid castings. Dust collected from machining, welding, etc. may be classified as hazardous waste. Consult local authorities regarding disposal.

Environmental precautions:

N/A

Methods and material for containment and cleaning up:

N/A

Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

No special handling requirements for this product. Observe good industrial hygiene practices. Read and understand the manufacturer's instruction and the precautionary label on the product. See the Australian Standard - AS 1674.1 – 1997 – Reconfirmed 2016. Safety in Welding and Allied Processes Australia.

Conditions for safe storage, including any incompatibilities

Storage:

Store locked up. Store in corrosive resistant container with a resistant inner liner. Keep container tightly closed. Store in a well-ventilated place. Keep in cool, dry location far from heat source and flame. Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Exposure Guidelines:

Refer to the Safe Environments risk management document – Welding Fume -

<http://www.safeenvironments.com.au/welding-fume/> The exposure standard refers to the publication by Work Safe Australia “Workplace Exposure Standard for Airborne Contaminants” with the Date of Effect being 22 December 2011. Work Safe Australia note that “exposure standards do not represent a fine dividing line between a healthy and unhealthy work environment. Natural biological variation and the range of individual susceptibilities mean that a small number of people might experience adverse health effects below the exposure standard.

Exposure Standards					
CAS	Ingredient	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³
7440-44-0	Carbon		N/A		
7440-21-3	Silicon		10		
7439-96-5	Manganese - Fumes		1		3
7440-02-0	Nickel		1		
7440-47-3	Chromium		0.5		
N/A	Chromium (Hexavalent)		N/A		
7439-98-7	Molybdenum Insoluble		10		
7704-34-9	Sulphur		N/A		
7723-14-0	Phosphorus		0.1		

Exposure Standards Continued					
CAS	Ingredient	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³
7429-90-5	Aluminium – Dust Aluminium – Fume		10 5		
7440-32-6	Titanium		N/A		
7440-50-8	Copper – Dust Copper – Fume		1 .02		
7439-89-6	Iron Dust & Fume		5		

Reference: ACGIH Biological Exposure Indices

Refer to Worksafe Australia for standards:

http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/639/Workplace_Exposure_Standards_for_Airborne_Contaminants.pdf

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

No biological exposure limits noted for the product(s) in solid state.

When welding good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Engineering controls: No further relevant information available.

Ventilation

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

Breathing equipment:



Where an inhalation risk exists, wear a Class P2 (Metal fume) respirator. If using product in a confined area, wear an Air-line respirator.

Protection of hands:



Wear nitrile or neoprene gloves for routine industrial use. Use triple gloves for spill response.

Eye protection:



Wear safety glasses with side shields (or goggles). When these products are used in conjunction with soldering, it is recommended that safety glasses, goggles, or face-shield with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting") be worn.

Body protection: Protective work clothing



9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance	Silver grey colour	Physical State	Solid
Odour	No Odour	Flammability	Not Flammable
Odour Threshold	Not Applicable	Flash Point	Not Available
pH	Not Applicable	Auto Igniting	Not Available
Melting point/range	Not Available	Solubility water	Not Applicable
Vapour Pressure, mmHg@980°C	Not Applicable	Flash Point	Not Applicable
Vapour Density	Not Available	Density at 20°C (68°F)	Not Applicable
Boiling Point & boiling range	2750°C for iron	Evaporation Rate	Not Applicable
Freezing/Melting Point	Approx. 1300°C	Specific Gravity @200C (water = 1)	Not Applicable

10 Stability and reactivity

Reactivity: The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability: Stable under normal temperatures and pressures and conditions of storage.

Possibility of hazardous reactions

Polymerization is not expected to occur.

Conditions to avoid: None

Incompatible materials: None

Hazardous decomposition products: None

Brazing fumes and gases cannot be classified simply. The composition and products: quantity of both are dependent upon the metal being joined, the process, procedure and filler metals and flux used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the metal being joined (such as paint, plating, or galvanizing), the number of operators and the volume of the worker area, the quality and amount of ventilation, the position of the operator's head with respect to the fume and fumes from chemical fluxes used in some brazing operations. When the wire or rod is consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3. 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 and coating, etc., as noted above.

11 Toxicological information

Grey cast iron in solid form does not present any toxicological effects, dusts and fumes generated from welding, machining, etc. may cause health effects.

Information on toxicological effects:

Acute toxicity:

Excessive inhalation of fumes and dust can produce an acute reaction known as "metal fume fever". Symptoms consist of chills and fever, metallic taste in the mouth, dryness and irritation of the throat and weakness and muscle pain. Symptoms usually last 12 to 48 hours.

Skin Contact:

Skin contact with dusts may cause irritation or sensitization.

Eye Contact:

Exposure to high concentration of dusts may cause eye irritation.

Respiratory sensitisation:

This product is not expected to cause skin sensitisation.

Aspiration:

Not a respiratory sensitiser.

Inhalation:

Harmful if inhaled. May cause respiratory tract irritation. Prolonged inhalation may be harmful.

Carcinogenicity:

Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B). Prolonged or repeated over-exposure to iron oxide produced by grinding, welding, etc. may lead to siderosis. No physical impairment of lung function has been associated with siderosis.

STOT – single exposure:

May cause irritation of respiratory tract.

STOT – repeated exposure:

Not classified

Toxicity				
CAS	Ingredient	Oral Toxicity LD50	Intravenous Toxicity LD50	Inhalation Toxicity LD50
7440-44-0	Carbon	N/A		
7440-21-3	Silicon	10 gm/kg (mouse) 10 gm/kg (rat)		
7439-96-5	Manganese	>2000 mg/kg (rat)		
7440-02-0	Nickel	5000 mg/kg (Rat)		
7440-47-3	Chromium	27.5mg/kg (rat)		
N/A	Chromium (Hexavalent)			
7439-98-7	Molybdenum		70mg/kg (Rabbit)	
7704-34-9	Sulphur	>8437mg/kg (rat)	1660mg/m ³ Mammal	
7723-14-0	Phosphorus	4.82mg/kg (mouse)		
7429-90-5	Aluminium	N/A		
7440-32-6	Titanium			
7440-50-8	Copper- Dust & Fumes	0.12mg/kg Human	3.5mg/kg Mouse	
7439-89-6	Iron	30mg/kg (rat)		

12 Ecological information

Ecotoxicity: Limited ecotoxicity data was available for this product at the time this report was prepared.

Ensure appropriate measures are taken to prevent this product from entering the environment.

Persistence and Degradability: No data is available on the degradability of this product

Bioaccumulative Potential: No data is available on the degradability of this product

Mobility in soil: No data is available on the degradability of this product

Other adverse effects: No data is available on the degradability of this product

13 Disposal considerations

Waste treatment methods

Recommendation:

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.

Uncleaned packagings: Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Recommendation: Disposal must be made according to official regulations.

14 Transport Information

This product is not classed as hazardous.

UN-Number DOT, ADR, ADN, IMDG, IATA	Not Regulated
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Not Regulated
Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class	Not Regulated
Packing group DOT, ADR, IMDG, IATA	Not Regulated
Environmental hazards: Marine pollutant:	No
Special precautions for user	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Not regulated.

15 Regulatory information

Product Name: 111 Kastweld Grey Iron Cast

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Poison Schedule:

Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications:

Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

Refer to the Australian Inventory of Chemical Substances – AICS at <https://www.nicnas.gov.au/chemicals-on-AICS#main>

Poison schedule: Classified as a Schedule 6 (S6) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP). <https://www.legislation.gov.au/Details/F2016L01638>

Classifications: Safework Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals.

The classifications and phrases listed below are based on the Approved Criteria for Classifying Hazardous Substances [NOHSC: 1008(2004)].

16 Other information

References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice

Standard for the Uniform Scheduling of Medicines and Poisons

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Modell Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants, Safe work, Australia

American Conference of Industrial Hygienists (ACGIH)

Globally Harmonised System of classification and labelling of chemicals.

WELDING (1): Due to the diversity of welding techniques, processes, materials used, nature of the surface being welded and the presence of contaminants, the fumes & gases associated with welding will vary in composition and quantity. When assessing a welding process, the toxic fumes generated may not only be associated with the parent metal, filler wire or electrode. The welding/cutting arc may generate nitrogen oxides, carbon monoxide & other gases, whilst UV radiation emitted from some arcs generates ozone. Ozone may irritate mucous membranes and cause pulmonary oedema & haemorrhage. Shielding gases (e.g. carbon dioxide and inert gases i.e. argon and helium) in high concentrations, in confined spaces, may reduce oxygen in the atmosphere to dangerous levels, resulting in possible asphyxiation.

WELDING (2): In addition to complying with individual exposure standards for specific contaminants, where current manual welding processes are used, the fume concentration inside the welder's helmet should not exceed 5 mg/m³ (unless otherwise classified) when collected in accordance with Australian Standard AS 3853.1: Fume from welding and allied processes - Guide to methods for the sampling and analysis of particulate matter and AS 3853.2: Fume from welding and allied processes - Guide to methods for the sampling and analysis of gases. Airway irritation and metal fume fever are the most common acute effects from welding fumes. Reported to cause reduced sperm quality in welders.

WELDING (3): Other gases and fumes associated with welding processes include: Inert shielding gases (e.g. argon, carbon dioxide, helium) which may reduce the atmospheric oxygen content in poorly ventilated areas. UV-radiation and Infra-Red radiation may decompose chlorinated degreasing agents to form highly toxic and irritating phosgene gas. This may occur if a metal has been degreased but inadequately dried or when vapours from a nearby degreasing bath enter the welding zone.

WELDING (4): Welding fumes may contain a wide variety of chemical contaminants, including oxides and salts of metals and other compounds which may be generated from electrodes, filler wire, flux materials and from the welded material (e.g. painted surfaces). Welding stainless-steel and its alloys generates nickel and chromium (VI) compounds. Welding fumes are retained in the lungs. Sparingly soluble compounds may be released slowly from the lungs. Welding fume is classified as possibly carcinogenic to humans (IARC Group 2B).

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

Disclaimer:

We urge each end user and recipient of this SDS to study it carefully. If necessary, consult an industrial hygienist or other expert to understand this information and safeguard the environment and protect workers from potential hazards associated with the handling or use of this product.

Harris Products Group cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

WARNING: PRODUCT COMPONENTS PRESENT HEALTH AND SAFETY HAZARDS. READ AND UNDERSTAND THIS MATERIAL SAFETY DATA SHEET (M.S.DS.). ALSO, FOLLOW YOUR EMPLOYER'S SAFETY PRACTICES.

The information contained herein relates only to the specific product. If the product is combined with other materials, all component properties must be considered. **BE SURE TO CONSULT THE LATEST VERSION OF THE MSDS. MATERIAL SAFETY DATA SHEETS ARE AVAILABLE FROM HARRIS PRODUCTS GROUP** Harris Products Group, HGE PTY LTD, Brisbane | Melbourne | Perth | New Zealand, 14 Queensland Rd, Darra, QLD 4076, Phone: (07) 3375 3670 | Fax: (07) 3375 3620, Email: sales@hgea.com.au, www.harrisproductsgroup.com.au,

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[End of SDS]