Manganese Metal Co

Safety Data Sheet

Aluminum Chrome Briquettes

acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 regulations

Document owner: **MMC Laboratory**

Effective Date:	Revision Date:	Revision No:
02 May 2017	**25 February 2025**	**3**

Trade Name: Chrome Aluminum Briquettes

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1. Product identifier

Trade name: ALUMINUM CHROME BRIQUETTES
Aluminum CAS Number: 7440-47-3, **Aluminum EC Number:** 231-157-5
Chrome CAS number: 7429-90-5, **Chrome EC number**: 231-072-3

Other means of identification
METALLIC CHROMIUM AND ALUMINUM
MMC ALUMINUM CHROME BRIQUETTES
CHROME ALUMINUM BRIQUETTES

1.2. Recommended use and restrictions

Recommended Use(s)
Industrial use
Laboratory application

Restriction on use(s):
no relevant information available

1.3. Details of the supplier of the safety data sheet

Supplier name MANGANESE METAL COMPANY
Address PO Box 323, Nelspruit, South Africa, 1200
Telephone (+-2713) 759 4600
Fax (+-2713) 752 7657
Email morne.ruiters@mmc.co.za
Website http://www.mmc.co.za

1.4. Emergency telephone number(s)

Emergency (013) 759 4600

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS classifications(s): flammable

2.2. Label elements

Signal word: warning
GHS label Elements
The substance is classified and labelled according to Globally Harmonized system (GHS)
Hazard Pictogram: not regulated
Hazard statements:
H228: flammable Solid.
H 261: In contact with water releases flammable gases
Precautionary statement/s

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources
P223: Do not allow contact with water
P241: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection
Response statement/s
P370+ 378: In case of fire: use appropriate media to extinguish.
P314 get medical advice/attention if you feel unwell
Storage statement/s
P402+404: Store in a dry place. Store in a closed container
Disposal statement/s
P501: Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

There are no other hazards not otherwise classified that have been identified.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1. Substances / Mixtures

Ingredient	CAS number	EC number	Content
CHROMIUM	7440-47-3	231-157-5	75%
ALUMINIUM POWDER (PYROPHORIC)	7429-90-5	231-072-3	25 %

4. FIRST AID MEASURES

4.1. Description of first aid measures

General information

Not anticipated to cause any harm if in contact with clothing, skin or eye. However, in case of accident or unwellness, seek medical advice immediately

Following Eye contact:
If in eyes, hold eyelids apart and flush continuously with running water or diphoterine solution. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Following Inhalation:
If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Following Skin contact:
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water or diphoterine. Continue flushing with water or diphoterine until advised to stop by a Poisons Information Centre or a doctor.
Following ingestion:
For advice, contact a Poison Information Centre or a doctor. If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.

Self-protection of first-aider
Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.

First aid facilities:
Eye wash facilities and safety shower should be available.

4.2. Most important symptoms and effects, both acute and delayed

No information provided

4.3. Immediate medical attention and special treatment needed

No information provided.
Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing agents:

Dry agent, soda ash, sand or lime. Do not use water or foam. Withdraw from area and let fire burn out. Prevent contamination of drains and waterways.

For safety reasons unsuitable extinguishing agents:

Water or foam.

5.2. Special hazards arising from the substance or mixture

Flammable when wet. May evolve flammable hydrogen gas in contact with water, oxidising agents, acids or alkalis. Dust may form explosive mixtures with air. May explode in contact with oxidising agents.

5.3. Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Fires may re-ignite during extinguishing process. Finely divided dust may form explosive mixtures in air when exposed to heat or ignition source (DO NOT disturb burning dust).

5.4. Hazchem code

4W

- 4 Dry Agent (water MUST NOT be allowed to come into contact with substance).
- W Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1 For Non-emergency personnel:

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. CAUTION: May evolve flammable gases in contact with water. Eliminate all sources of ignition.

6.1.2 For Emergency Responders:

Remove persons to safety. Isolate hazard area and denies entry. Ventilate closed spaces before entering. Use personal protective equipment, see section 8

6.2. Environmental precautions

Prevent product from entering drains and waterways.

6.3. Methods of cleaning up

Eliminate all sources of ignition. Collect and place in dry, clean, pressure vented, metal containers for re-use or disposal. Use spark proof equipment and shovels.

6.4. 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

7.1. Handling

Precautions for safe handling:

Protective Measures

Use in well ventilated areas.
avoid handling with incompatible substances/mixtures comprising of: water (evolving flammable gas), oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium).
Avoid dust generating operations or must be carried out in properly ventilated areas while wearing appropriate PPE.

Advice on general occupational hygiene

Do not eat, drink or smoke in contaminated area
Wash hands before and after use and keep them dry
Remove contaminated clothing and personal protective equipment before entering eating areas.

Information about protection against explosions and fires:

Dust can combine with air to form an explosive mixture.

Information about protection against explosions and fires:

Dust can combine with air to form an explosive mixture.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1 Specific storage requirements:

a) Risk management associated to physical and chemical properties

I) Explosive atmosphere: The substance is not explosive, however, store material away from possible explosive materials.
ii) Corrosive conditions: The substance does not corrode metal, hence no adverse corrosive effects are expected
iii) Flammability hazard: The substance is flammable, Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.
iv) Incompatible substances or mixtures: water (evolving flammable gas), oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium).
v) Evaporative conditions: Avoid storage around organic evaporative materials/substances
vi) Potential ignition sources: Keep away from ignition sources
b) How to control effects from environmental conditions: Weather conditions, ambient pressure, varying temperatures, sunlight and vibration do not affect the integrity of the substance. However, storage environments should not be very humid or very high temperatures.
c) How to maintain the integrity of the substance: The substance is very stable under normal conditions of use. It does not decompose or disintegrate.
d) Other advice:
i) Ventilation requirements: Ensure adequate ventilation and store at room temperature.
Ii) Specific designs for storage: Keep/store only in original container/packaging.
iii) Quantity limits under storage conditions: There is no limitation as the substance does not pose any physical and chemical hazards
iv) Packaging compatibility: Store in original/similar packaging. Protect container/packaging against damage

7.3. Specific end use(s)

No information provided.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1. Control parameters

Exposure standards
Substance Reference
STEL
ppm mg/m³ ppm mg/m³
Aluminium (metal dust) SWA (AUS) -- 10 -- --
Substance Reference
TWA STEL
ppm mg/m³ ppm mg/m³
Aluminium (welding fumes) (as Al) SWA (AUS) -- 5 -- --
Aluminium, alkyls (NOC+) (as Al) SWA (AUS) -- 2 -- --
Aluminium, pyro powders (as Al) SWA (AUS) -- 5 -- --
Aluminium, soluble salts (as Al) SWA (AUS) -- 2 -- --

Chromium Metal SWA (AUS) -- 0.5 -- --

Biological limits

No Biological Limit Value allocated.

Ingredient Reference Determinant Sampling time BEI

CHROMIUM ACGIH BEI Total chromium in urine End of shift at end of workweek
25 µg/L
ACGIH BEI Total chromium in urine Increase during shift
10 µg/L

8.2. Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed. Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work. Do not inhale dust / smoke / mist.
Avoid contact with the eyes.
Avoid close or long-term contact with the skin.

Engineering controls:

Dust should be trapped and recycled where possible. Waste water is collected for treatment and be recycled.

Breathing equipment:

Not required under normal conditions of use.
Wear appropriate NIOSH respirator where ventilation is inadequate and occupational exposure limits are exceeded.
For spills, respiratory protection may be advisable.
Use respiratory protection when grinding or cutting material.

Protection of hands:

Wear PVC or rubber gloves.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Eye protection: Wear dust proof goggles.

Body protection:

When working with large quantities wear overalls, and safety shoes.

Limitation and supervision of exposure into the environment No special requirements.

Risk management measures No special requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	GREY SOLID

Odour	SLIGHT ODOUR
Odour Threshold	NOT AVAILABLE
Flammability	FLAMMABLE WHEN WET
Flash Point	NOT RELEVANT
Boiling Point	2672°C
Melting Point	1857°C
Evaporation Rate	NOT AVAILABLE
pH	NOT AVAILABLE
Specific Gravity	NOT AVAILABLE
Solubility (water)	REACTS
Vapour Density	NOT AVAILABLE
Vapour Pressure	NOT AVAILABLE
Upper Explosion Limit	NOT RELEVANT
Lower Explosion Limit	NOT RELEVANT
Partition Coefficient	NOT AVAILABLE
Auto-ignition temperature	NOT AVAILABLE
Decomposition Temperature	NOT AVAILABLE
Product name	ALUMINUM CHROME BRIQUETTES
Viscosity	NOT AVAILABLE
Explosive Properties	NOT AVAILABLE
Oxidising Properties	NOT AVAILABLE

9.2. Other information

Density	7.20 g/cm²

10. STABILITY AND REACTIVITY

10.1. Reactivity

Carefully review all information in sections 10.2 to 10.5.

10.2. Chemical stability

Stable under recommended conditions of storage. Air and moisture sensitive.

10.3. Possibility of hazardous reactions

Reacts with water.

10.4. Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources. Avoid exposure to moisture.

10.5. Incompatible materials

Incompatible with water (evolving flammable gas), oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium)

10.6. Hazardous decomposition products

Under fire conditions only: Toxic metal oxide smoke can be released when heated to decomposition

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Health hazard
Summary
Irritant. This product has the potential to cause adverse health effects with over exposure. Use safe work practices to avoid eye or skin contact and inhalation. Chronic exposure may result in breathing difficulties and lung fibrosis. Caution: Dangerous when wet. May evolve flammable hydrogen gas upon contact with moisture.
Eye: Low to moderate irritant. Contact may result in mild irritation, lacrimation and redness.
Inhalation Irritant: Over exposure may result in mucous membrane irritation of the respiratory tract, with coughing. Some studies report that chronic exposure to fine aluminium dust may result in asthma-like symptoms, lung fibrosis (restricting lung function) and a link with Alzheimers disease.
Skin: Low irritant. Prolonged or repeated contact may result in mechanical irritation.
Ingestion: Low toxicity. Ingestion of large quantities may result in nausea, vomiting and gastrointestinal irritation.
Toxicity data CHROMIUM (7440-47-3)
LDLo (Ingestion): 71 mg/kg (human)
TDLo (Ingestion): 1.2 mg/kg/6 weeks (rat)
Probable route(s) of exposure:

Ingestion. Inhalation. Eye contact. Skin contact.

Repeated dose toxicity: Long term inhalation of product dust may be harmful.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure:

Based on available data, the classification criteria are not met.

STOT-repeated exposure:

Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

No information provided.

12.2. Persistence and degradability

No information provided.

12.3. Bio accumulative potential

No information provided.

12.4. Mobility in soil

No information provided.

12.5. Additional ecological information

General notes: Avoid release to the environment.

12.6. Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: not applicable

12.7. Endocrine disrupting properties

No information

12.8. Other adverse effects

Aluminium in soil may be present as the metal, the oxide or hydroxide, the 3+ ion, or the 3+ ion as an organic complex. The mobility in soil will be greater at high or low soil pH.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Recommendation:

Recycle where possible. Collect without generating dust. Eliminate all sources of ignition. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required). CAUTION: May evolve flammable gases upon contact with water.

13.2 Uncleaned packaging

Recommendation: Dispose of in accordance with relevant local official legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE
Land Transport Sea Transport Air Transport
(ADG) (IMDG/IMO) (IATA/ICAO)

14.1. UN number

1396 1396 1396

14.2. UN proper shipping name

ALUMINIUM POWDER, UNCOATED

14.3. Transport hazard classes

DG division 4.3 4.3 4.3
Subsidiary risk(s) None Allocated - -

14.4. Packing group II II II

14.5. Environmental hazards

None Allocated

14.6. Special precautions for user

Hazchem Code 4W
EMS F-G, S-O

15. REGULATORY INFORMATION

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

Poison schedule Classified as a Schedule 6 Poison using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Product name ALUMINUM CHROME BRIQUETTES

F - Flammable
F+ - Extremely flammable
Classifications
AUSTRALIA: AICS (Australian Inventory of Chemical Substances)
All components are listed on AICS, or are exempt.
EUROPE: EINECS (European Inventory of Existing Chemical Substances)
All components are listed on EINECS, or are exempt.
Inventory listing(s)

15.2. Chemical safety assessment

No information provided.

Section 302 (extremely hazardous substances):
Substance is not listed
Section 355 (extremely hazardous substances):
Substance is not listed.
Section 313 (Specific toxic chemical listings):
Substance is listed.
TSCA (Toxic Substances Control Act)
Substance is listed.

Proposition 65 (California)

Chemicals known to cause cancer:
Substance is not listed.
Chemicals known to cause reproductive toxicity for females:
Substance is not listed.
Chemicals known to cause reproductive toxicity for males:
Substance is not listed.
Chemicals known to cause developmental toxicity:
Substance is not listed.

Carcinogenic categories

EPA (Environmental Protection Agency):

IARC (International Agency for Research on Cancer):
Substance is not listed.
NIOSH-Ca (National Institute for Occupational Safety and Health):
Substance is not listed.

16. OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Date of preparation / last revision 02/05/2017 / - 25/02/2025

Revision on section: 2,3 &16

Abbreviations

ACGIH American Conference of Governmental Industrial Hygienists
CAS # Chemical Abstract Service number - used to uniquely identify chemical compounds
CNS Central Nervous System
EC No. EC No - European Community Number
EMS Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
GHS Globally Harmonized System
GTEPG Group Text Emergency Procedure Guide
IARC International Agency for Research on Cancer
LC50 Lethal Concentration, 50% / Median Lethal Concentration
LD50 Lethal Dose, 50% / Median Lethal Dose
mg/m³ Milligrams per Cubic Metre
OEL Occupational Exposure Limit
pH relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm Parts Per Million
STEL Short-Term Exposure Limit
STOT-RE Specific target organ toxicity (repeated exposure)
STOT-SE Specific target organ toxicity (single exposure)
SUSMP Standard for the Uniform Scheduling of Medicines and Poisons
SWA Safe Work Australia
TLV Threshold Limit Value
TWA Time Weighted Average

Sources

Website, European Chemicals Agency (echa.europa.eu)
website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org) Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN:978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

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17. AMENDMENT HISTORY

The following information documents the last changes

Date	Revised by	Changes
27 August 2017	S Kampers Parsley Studios	Changed MMC logo and the document format, no changes to the actual content of the document was made.
18 June 2021	Twice Mnisi	Incorporated MARA's format changes in section 1,2, 3, 4, 6, 7, 12, 13, 14, and 16
25 June 2025	Twice Mnisi	Added additional information on section 2, 3 and 16