SAFETY DATA SHEET

Revision date: 29-Jul-2021

Revision Number 5

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product identifier

Product Name FERRO CHROME (ALL GRADES)

Product Code(s) 000000015481

Other means of identification

Synonyms Product Series: Low Carbon Ferro Chrome * High Carbon Ferro Chrome * HC Crushed Ferro Chrome * LC Crushed Ferro Chrome * Charge Chrome * Nitrogen Bearing Ferro Chrome * FECR * HCFeCr

Recommended use of the chemical and restrictions on use

Recommended use Alloy additive for iron and steel.

Uses advised against No information available.

Details of the supplier of the safety data sheet

Supplier
Ixom Operations Pty Ltd (Incorporated in Australia)
NZBN: 9429041465226 Address: 166 Totara Street
Mt Maunganui South
New Zealand

Telephone Number: +64 9 368 2700
Facimile: +64 9 368 2710

For further information, please contact

Contact Point Product Safety Department

Emergency telephone number

Emergency Telephone **0 800 734 607 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Not classified as a Dangerous Good under NZS 5433 Transport of Dangerous Goods on Land; NON-DANGEROUS GOODS.

Classified as hazardous according to criteria in the Hazardous Substances (Hazard Classification) Notice 2020.

GHS Classification

SIGNAL WORD
Danger

Additives, Process Chemicals and Raw Materials (Carcinogenic) Group Standard 2020
Approval Number: HSR002512

Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 2
Reproductive toxicity	Category 2
Acute aquatic toxicity	Category 3
Chronic aquatic toxicity	Category 3

Label elements

Hazard statements
H317 - May cause an allergic skin reaction
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility or the unborn child
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wash hands thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves
Use personal protective equipment as required
Wear respiratory protection
Avoid release to the environment
Precautionary Statements - Response
If exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
Precautionary Statements - Storage
Store locked up
Precautionary Statements - Disposal
Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Other hazards which do not result in classification

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
Chromium	7440-47-3	>60
Silicon	7440-21-3	0.1-3
Nickel (metal)	7440-02-0	0.1-0.4
Carbon	7440-44-0	0.1% max.
Iron	7439-89-6	to 100

4. FIRST AID MEASURES

Description of first aid measures

Emergency telephone number Poisons Information Center, New Zealand: 0800 764 766
Poisons Information Center, Australia: 13 11 26

Inhalation Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash off immediately with soap and plenty of water. Call a physician if symptoms occur.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms and effects, both acute and delayed

Symptoms Irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction. Redness. Rashes. Hives.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Suitable Extinguishing Media Use extinguishing agent suitable for type of surrounding fire.

Unsuitable extinguishing media High volume water jet.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Non-combustible. Environmentally hazardous.

Special protective actions for fire-fighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes, and clothing. Avoid breathing dust or spray mist. Avoid generation of dust. Do not touch or walk through spilled material. Ensure adequate ventilation. Evacuate personnel to safe areas. Use personal protective equipment as required. Wash thoroughly after handling.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Use appropriate personal protective equipment (PPE). Carefully shovel or sweep up spilled material and place in suitable container. Avoid generating dust.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin and eyes. Avoid generation of dust. Do not eat, drink or smoke when using this product. Use personal protection equipment. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible materials Acids. Molten alkalis.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Limits No value assigned for this specific material by the New Zealand Workplace Health & Safety Authority. However, Workplace Exposure Standard(s) for constituent(s):

Chromium metal: WES-TWA 0.5 mg/m^3, rsen
This product may be oxidized to hexavalent chromium:
Chromium (VI) compounds, as Cr: WES-TWA 0.00002 mg/m^3; WES-STEL 0.0005 mg/m^3, dsen, rsen, bio
Chromium (VI) compounds, as Cr (6.7A, bio), dsen for all chromium (VI) compounds except barium, lead and poorly soluble zinc chromates, skin for all soluble chromium VI compounds: 6.7A Known or presumed human carcinogen, rsen
Nickel elemental: WES-TWA 0.02 mg/m^3, Respirable dust WES-TWA 0.005 mg/m^3, 6.7B Suspected human carcinogen, sen
Silicon: WES-TWA 10 mg/m^3

As published by the New Zealand Workplace Health & Safety Authority.

WES - TWA (Workplace Exposure Standard - Time Weighted Average) - The eight-hour, time-weighted average exposure standard is designed to protect the worker from the effects of long-term exposure.

WES - STEL (Workplace Exposure Standard - Short Term Exposure Limits) - The 15 minute average exposure standard. Applies

to any 15 minute period in the working day and is designed to protect the worker against adverse effects of irritation, chronic or irreversible tissue change, or narcosis that may increase the likelihood of accidents. The WES-STEL is not an alternative to the WES-TWA; both short-term and eight-hour, time-weighted average exposures should be determined.

`Sen' Notice - sensitiser. The substance can cause a specific immune response in some people. An affected individual may subsequently react to exposure to minute levels of that substance.

(dsen) - Dermal sensitiser.

(rsen) - Respiratory sensitiser.

'bio' - Biological Exposure Index.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls

Engineering controls Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, SAFETY GLASSES, GLOVES, DUST MASK.

Eye/face protection Glasses.

Hand protection Impervious gloves.

Skin and body protection Overalls. Protective shoes or boots.

Respiratory protection If determined by a risk assessment an inhalation risk exists, wear a dust mask/respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Solid
Appearance Lumps Chips Powder

Color	Metallic Silver Grey
Odor	No information available.
Odor threshold	No information available.

Property	**Values**	**Remarks • Method**
pH	Not applicable	
Melting point / freezing point	>1500°C	None known
Boiling point / boiling range	No data available	None known
Flash point	Not applicable	
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	
Vapor density	No data available	None known
Relative density	6-9 t/m³	
Water solubility	Insoluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information

10. STABILITY AND REACTIVITY

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions Can react with molten alkalis with the formation of compounds containing chromium (VI).

Conditions to avoid

Conditions to avoid Dust formation.

Incompatible materials

Incompatible materials Acids. Molten alkalis.

Hazardous decomposition products

Hazardous decomposition products Metal oxides.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Information on likely routes of exposure

Product Information No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:

Inhalation May cause irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause sensitization by inhalation.

Eye contact Dust contact with the eyes can lead to mechanical irritation.

Skin contact May cause irritation. May cause sensitization by skin contact.

Ingestion May cause gastrointestinal discomfort if consumed in large amounts.

Symptoms Irritation. May cause sensitization by inhalation and skin contact. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Redness. Rashes. Hives.

Acute toxicity

Numerical measures of toxicity
No information available.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Silicon	= 3160 mg/kg (Rat)	-	-
Nickel (metal)	> 9000 mg/kg (Rat)	-	> 10.2 mg/L (Rat) 1 h
Carbon	> 10000 mg/kg (Rat)	-	-
Iron	= 30 g/kg (Rat)	-	-

See section 16 for terms and abbreviations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Not classified.

Serious eye damage/eye irritation Not classified.

Respiratory or skin sensitization May cause sensitization by inhalation. May cause sensitization by skin contact. Classification is based on mixture calculation methods based on component data.

Germ cell mutagenicity Not classified.

Carcinogenicity Suspected of causing cancer. Classification is based on mixture calculation methods based on component data.
The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	New Zealand	IARC
Chromium - 7440-47-3		Group 3
Nickel (metal) - 7440-02-0		Group 2B

Reproductive toxicity H361 - Suspected of damaging fertility or the unborn child.

STOT - single exposure Not classified.

STOT - repeated exposure Not classified.

Aspiration hazard Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity Keep out of waterways. Harmful to aquatic life with long lasting effects.

Terrestrial ecotoxicity There is no data for this product.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Nickel (metal)	EC50: =0.18mg/L (72h, Pseudokirchneriella subcapitata) EC50: 0.174 - 0.311mg/L (96h, Pseudokirchneriella subcapitata)	LC50: >100mg/L (96h, Brachydanio rerio) LC50: =1.3mg/L (96h, Cyprinus carpio) LC50: =10.4mg/L (96h, Cyprinus carpio)	EC50: >100mg/L (48h, Daphnia magna) EC50: =1mg/L (48h, Daphnia magna)
Iron	-	LC50: =13.6mg/L (96h, Morone saxatilis)	-

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation No information available.

Mobility

Mobility in soil No information available.

Other adverse effects

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused products Dispose of product in packaging/container in a way that is consistent with the Hazardous Substances (Disposal) Notice 2017 and the Act, and Hazardous Substances (Amendments and Revocations) Notice 2020. Treat the chemical using a method that changes the characteristics or composition of the chemical so that the chemical is no longer a hazardous chemical; or export the chemical from New Zealand as waste.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT Not classified as a Dangerous Good under NZS 5433 Transport of Dangerous Goods on Land; NON-DANGEROUS GOODS.

IATA Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; NON-DANGEROUS GOODS.

IMDG Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; NON-DANGEROUS GOODS.

15. REGULATORY INFORMATION

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

New Zealand

National regulations See section 8 for national exposure control parameters

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International Inventories

NZIoC	All the constituents of this material are listed on the New Zealand Inventory of Chemicals.
TSCA	Contact supplier for inventory compliance status.
DSL/NDSL	Contact supplier for inventory compliance status.
EINECS/ELINCS	Contact supplier for inventory compliance status.
ENCS	Contact supplier for inventory compliance status.
IECSC	Contact supplier for inventory compliance status.
KECL	Contact supplier for inventory compliance status.
PICCS	Contact supplier for inventory compliance status.
AICS	All the constituents of this material are listed on the Australian Inventory of Industrial Chemicals.

Legend:
NZIoC - New Zealand Inventory of Chemicals
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
- Australian Inventory of Industrial Chemicals

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. OTHER INFORMATION

Supplier Safety Data Sheet 04/ 2020

Prepared By	This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).
Issuing Date:	29-Jul-2021
Reason(s) For Issue:	5 Yearly Revised Primary SDS Updated Formulation Change in Physical Properties

Revision Note:
The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian Industrial Chemicals Introduction Scheme (AICIS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

End of Safety Data Sheet