



Material Safety Data Sheet (MSDS)

Material Safety Data Sheet

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Atomised, Milled Ferrosilicon
Distributor/Agent	7D Holdings SA (Pty) Ltd
Address	Unit E26, U Can Store Storage 30 Elandclose Alberton, 1449 Johannesburg, RSA
Telephone Number	+27 (0)11 057 6755
Fax Number	+27 (0)86 733 8598
Email	info@7dholdings.com / sales@7dholdings.com

Country of Manufacture South Africa

2. HAZARD IDENTIFICATION

This substance is not classified as dangerous according to directive 67/548 as amended and adapted

Physical/Chemical hazards	Not classified as dangerous
Human Health Hazards	Not classified as dangerous
Environmental hazards	Not classified as dangerous.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Name</u>	<u>CAS Number</u>	<u>EC Number</u>	<u>%</u>
Iron Silicide (FeSi 6-18%)	12022-95-6	234-670-2	100

4. FIRST AID MEASURES

Eye contact	Immediately flood the eye with plenty of water for at least 10 minutes, holding the eye open. Avoid contaminating unaffected eye. Obtain medical attention if soreness or redness persists.
Skin	Wash skin with soap and running water. Obtain medical attention if soreness or redness persists.
Inhalation	Remove from exposure. Obtain medical attention if symptoms appear.
Ingestion	Do not induce vomiting. Keep warm and at rest. Obtain medical attention if symptoms appear. Obtain medical attention if large quantities have been ingested.
Advice to physicians	Treat symptomatically.



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5. FIRE FIGHTING MEASURES

Extinguishing media	Not combustible. Select extinguishing media according to surrounding materials
Special exposure hazards	None.
Protection for fire-fighters	No special measures required. Select protection for fire-fighters according to surrounding material.
Other hazards	None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Wear appropriate protective clothing. Avoid creating a dust cloud.
Environmental precautions	No special measures required.
Methods for clean-up	Sweep up into suitable containers for re-use, recovery or disposal. Avoid creating a dust cloud. If wet, do not re-pack with dry material and do not place in a closed or sealed container.

7. HANDLING AND STORAGE

Handling	Avoid creating dust. Avoid inhaling dust. Keep container closed when not in use.
Storage	Storage area should be dry and well ventilated. Store in original containers. Suitable storage materials: polypropylene bags. Under depleted oxygen conditions, a small amount of hydrogen will evolve if product is stored in slurry form with water for prolonged periods. Equipment like magnetic separators, pumps or transfer pipes that may contain residual substance must be well ventilated before any maintenance work is carried out, especially maintenance involving hot work.

8. EXPOSURE CONTROLS

Occupational exposure limits	Nuisance dust – TWA (8hr) =10mg/m ³
Occupational exposure controls	Use of the basic principles of Industrial Hygiene will enable this material to be used safely. Exposure to this material may be controlled in a number of ways. The measures appropriate for a particular worksite depend on how the material is used and on the potential for exposure. If engineering controls and work practices are not effective in preventing or controlling exposure, then suitable personal equipment, which is known to perform satisfactorily, should be used.
Respiratory protection	Mask should have a filtration efficiency of 95% minimum against PM10s. FFP2 masks recommended and should be replaced regularly.
Eye protection	Safety spectacles or chemical goggles
Skin protection – hands	Leather or other general purpose gloves.
Skin protection - body	Normal work wear. Overalls.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Metallic grey silver powder
Odour	None
Melting point	1260 degC
Flash point	Not applicable, inorganic substance
Flammability	Not flammable
Explosive properties	Not explosive
Oxidising properties	Not oxidising
Vapour pressure	Not applicable, melting point >300 degC
Relative density	2 – 7
Granulometry	PM10 content: <3%. PM20 content: 3-10%
Water solubility	Negligible
Partition co-efficient (octanol/water)	Not applicable, inorganic substance
Other properties: magnetic susceptibility (Satmagan)	58% min; non-magnetics (Davis tube) 0.75max; homogeneity 80% min;
Other properties: Phosphorous	controlled phosphorus below 0,15%

10. STABILITY AND REACTIVITY

Conditions to avoid	Storage under wet or damp conditions
Materials to avoid	Strong acids
Hazardous decomposition products	Stable under normal conditions. Under depleted oxygen conditions, a small amount of hydrogen will evolve if product is stored in slurry form with water for prolonged periods. If exposed to water the material can harden and cause corrosion of metals. Corrosion inhibitors can be used to minimise this effect.

11. TOXICOLOGICAL INFORMATION

Toxicokinetics, metabolism and distribution	The product is expected to be poorly absorbed.
Acute effects (acute toxicity and irritation/Corrosivity)	The product is expected to have a low order of acute toxicity by all routes of exposure. The product is not expected to be irritant to the skin. The product may cause transient eye irritation.
Sensitisation	No known reports of skin sensitisation.
Repeat dose toxicity/Carcinogenicity	No component of this product at levels greater than 0.1% is identified as a carcinogen by the International Agency for Research on Cancer (IARC) or the European Commission (EC).
Mutagenicity	No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.
Reproductive toxicity	No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin. No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a teratogenic or embryotoxic.



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12. ECOLOGICAL INFORMATION

Below is a Table containing test results. The analysis was done according to the Direct Estimation of Ecological Effect Potential (DEEP) DWA recommended protocols and hazard classification.

Results		12727 (FeSi)
Water quality	pH @ 25°C (A)	5,6
	EC (Electrical conductivity) (mS/m) @ 25°C (N)	2,63
	Dissolved oxygen (mg/l) (N)	8,4
V. fischeri (bacteria) (A)	Test started on yy/mm/dd	16/09/04
	%30min inhibition (-) / stimulation (+) (%)	-26(F)
	EC/LC20 (30 mins)	64
	EC/LC50 (30 mins)	n.r.
Toxicity unit (TU) / Description		<1
S. capricornutum (micro-algae) (N)	Test started on yy/mm/dd	16/09/01
	%72hour inhibition (-) / stimulation (+) (%)	-14(F)
	EC/LC20 (72hours)	n.r.
	EC/LC50 (72hours)	n.r.
Toxicity unit (TU) / Description		<1
D. magna (waterflea) (A)	Test started on yy/mm/dd	16/09/02
	%48hour mortality rate (-%)	-5
	EC/LC10 (48hours)	n.r.
	EC/LC50 (48hours)	n.r.
Toxicity unit (TU) / Description		<1
P. reticulata (guppy) (N)	Test started on yy/mm/dd	16/07/28
	%96hour mortality rate (-%)	0
	EC/LC10 (96hours)	n.r.
	EC/LC50 (96hours)	n.r.
Toxicity unit (TU) / Description		<1
Estimated safe dilution factor (%) [for definitive testing only]		64
Overall classification - Hazard class***		Class II - Slight acute/chronic hazard
Weight (%)		25

Key:

WQ = Water quality at the time of starting the *Daphnia magna* testing.

% = for definitive testing, only the 100% concentration (undiluted) sample mortality/inhibition/stimulation is reflected by this summary table. The dilution series results are considered for EC/LC values and Toxicity unit determinations

n.r. = not relevant, i.e. the 100% concentration caused less than 10/20/50% (effective concentration) mortalities or inhibition

(F) = Inhibition/Mortality rate with "(F)" indicates that the sample was filtered, this is often essential with turbid or coloured samples to perform the algae and bacteria tests. Filtration could potentially lower the toxicity for the specific test, but daphnia and guppy test samples are never filtered and hence toxicity will still be detected if affected by filtration

*** = The overall hazard classification takes into account the full battery of tests and is not based on a single test result. Note that the overall hazard classification is expressed as acute/chronic level of toxicity, due to the fact that the *S. capricornutum* (micro-algae) and the *V. fischeri* tests are regarded as short-chronic levels of toxicity tests and the overall classification therefore contains a degree of chronic toxicity assessment.

Weight (%) = relative toxicity levels (out of 100%), higher values indicate that more of the individual tests indicated toxicity within a specific class

A = Accredited; N = Non accredited; O = Outsourced; S = Sub-contracted; NR = Not requested; RTF = Results to follow

site/sample name shaded in purple = screening test

site/sample name shaded in orange = definitive test

The definition of a class II hazard: The percentage effect observed in at least one toxicity test is significantly higher than in the control, but the effect



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level is below 50% (TU is <1).

The product is not seen as an Acute Hazard in terms of GHS, since its > 100 mg/l.

Persistence and Degradability: Ferrosilicon is an inorganic substance and is not biodegradable. Also the solubility in water is low.

BOD5/COD: Both BOD and COD results were below the Laboratory Detection limit and were reported as < 10 mg/l.

Bio accumulative potential: From the available data, the potential for bio concentration and bioaccumulation are very low or absent.

Mobility in soil: Ferrosilicon is immobile in soil and sediment.

Other Adverse effects: No Data Available

PBT and vPvB Assessment: Ferrosilicon is an Inorganic material and therefore it's not classifiable as a PBT/vPvB substance.

13. DISPOSAL CONSIDERATIONS

Substance disposal	Dispose of in accordance with all applicable local and national regulations. Recycling or landfill is the recommended method of disposal.
Container disposal	Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. . Labels should not be removed from containers until they have been cleaned. Do not incinerate closed containers. Containers containing wet or damp material should not be closed or sealed.

14. TRANSPORT INFORMATION

Regulatory information	UN number	Proper shipping name	Class	Packaging group
ADR/RID classification			Not classified	
IMDG classification			Not classified	
IATA classification			Not classified	

15. REGULATORY INFORMATION

Hazard symbol	None
Indication of danger	None
Risk phrases	None
Safety phrases	None
Other	This datasheet has been compiled in accordance to EU directives 1999/45/EC, 67/548 as amended and adapted and the parts of EU regulation 1907/2006 in force at the date of issue. REACH Pre-Registration No: 05-2116391803-39-0000
	<u>US regulatory</u> TSCA: Listed under CAS number 12022-95-6 RCRA: not classified as a hazardous material under RCRA or its regulations 40 CFR 261 CERLA: not classified as a hazardous material under CERLA regulations 40 CFR 302 SARA: Not an extremely hazardous material under section 302 and not a toxic chemical subject to the requirements of 313.

16. OTHER INFORMATION

Preparation. We accept no liability whatsoever (accept as otherwise expressly provided by law) arising out of use of the information supplied. We are not responsible for any damage or injury resulting from incorrect use or from any failure to follow appropriate and accepted practices or from any hazard inherent in the nature of the product.