

CARD OF CHARACTERISTIC FEATURES

Date of formation / date of updating: 01.10.2003 / 01.07.2008

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND IDENTIFICATION OF ENTERPRISE

1.1. Identification of substance or preparation

Silicomanganese FeSiMn

1.2. Application of substance / preparation

The silicomanganese is a generally used deoxidizer and an alloying – constituent in steel production processes.

1.3. Identification of enterprise

Huta „Łaziska” S.A.
ul. Cieszyńska 23
43-170 Łaziska Górne

1.4. Emergency phone number

Phone: +48 (32) 3247100, +48 (32) 2241500
Fax: +48 (32) 2241523

2. INFORMATION ON THREATS

By observing the storage recommendations (point 7), the product does not present any threats to the health and environment.

Inflammable and harmful gases may be formed in contact with acids or bases (point 10).

Dust suspended in the air, may under certain circumstances, be the cause of explosion.

3. COMPOSITION / INFORMATION ON COMPONENTS

Dangerous components – none

Symbol – none

Return of R and S - none

Content:

Mn – 55,0 – 70,0%
Si – 14,0 – 26,0%
C – max 2,5%
P – max 0,35%
S – max 0,03%

Formula	No CAS	No EC (EINECS)
Si	7440-21-3	231-130-8
Fe	7439-89-6	231-096-4
Mn	7439-96-5	231-105-1

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4. FIRST AID

On contact with skin; rinse with water with addition of mild detergent.

On contact with eyes; rinse eyes with water,

On consumption; cause vomiting

On inhalation; bring person into fresh air.

In case of persistent ailments or in case of poisoning (point 11), call medical help and take out person from area of dust occurrence.

5. LINE OF CONDUCT IN CASE OF FIRE

Extinguishing media; dry sand, CO_2 , dry extinguishing powder.

The dry silicomanganese, occurring in the form of lumpy material and granulated product, is not an inflammable product.

The silicomanganese, mixed in the air, may under certain circumstances, provoke explosion.

6. LINE OF CONDUCT IN CASE OF UNINTENDED LIBERATION INTO THE ENVIRONMENT

The material in the form of dust should be kept in appropriate containers. Moistened products should be separated from dry ones and after their collection do not keep them in closed containers.

7. LINE OF CONDUCT WITH SUBSTANCE / PREPARATION AND ITS STORAGE

7.1. Line of conduct with substance / preparation

avoid formation and accumulations of dust and also its inhalation.

7.2. Storage

Silicomanganese must be stored in a dry and well ventilated place, far from acids and bases.

8. INSPECTION OF EXPOSURE AND MEANS OF INDIVIDUAL PROTECTION

In conformity with the Regulation of the Minister of Labour and Social Policy from the 29th November 2002 in the matter of the highest permissible concentrations and intensities of agents, which are harmful to the health at the place of employment (Journal of Law No. 217, pos. 1833), the NDS of the manganese content and its inorganic compounds, when recounted into Mn in the dust, amounts to $0,3 \text{ mg/m}^3$

- a) protection of airways
ensure good ventilation and at places of insufficient ventilation use dust - mask
- b) hand protection
use protective gloves
- c) Protection of eyes
rinse eyes with water jet

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Form - lumpy material, granulated product, screened fractions, cyclonic dust
Colour - silver - grey - metallic
Odour - none

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Solubility - is not soluble in water
- soluble in mixture of mineral acids

9.2. Important information concerning the health, safety and environment

Melting point 1100°C to 1250°C
Special gravity about 6,4 g/cm³

10. STABILITY AND REACTIVITY

10.1. Conditions to be avoided

In places with high concentrations of dusts avoid generation of sparks and other sources of ignition.

10.2. Factors to be avoided

Avoid contact with such materials acidic and base.
Reaction with hydrogen fluoride (HF) or nitric acid (HNO₃) leads to the generation of toxic gases, such as silica tetrafluoride (SiF₄) or nitric oxides (NO_x)

10.3 Dangerous decomposition products

Dangerous decomposition products; highly inflammable hydrogen (H₂) and very toxic gases –
- hydrogen phosphide / arsenous hydride may be formed, if FeSiMn will be in contact with acids or bases. Reaction with hydrogen fluoride (HF) or with nitrous acid HNO₃ leads to the generation of toxic gases, such as silica tetrafluoride (SiF₄) or nitrogen oxides (NO_x).

11. TOXICOLOGICAL INFORMATION

Inhalation; fine dust may irritate and dry up the mucous membranes. Hydrogen phosphide / arsenous hydride may be absorbed from the dust deposited on the mucous membrane. Hydrogen phosphide irritates the mucous membranes, the central nervous system and may cause pulmonary oedema.

Acute important poisoning with hydrogen phosphide may among others provoke, such effects as: headaches, malaise, abdominal pains, cough and breathing difficulties.

On contact with the skin; dust may irritate skin.

On contact with eyes; dust may irritate and dry up eyes.

Chronic influence; - prolonged exposure to the actions of hydrogen phosphide may lead to prolonged effect such as difficulties in gait and problems with the speech.

12. ECOLOGICAL INFORMATION

The product is not described as dangerous for the environment.

13. LINE OF CONDUCT WITH DISCARDS

Discard from the silicomanganese are not classified as a dangerous.

The material should be reclaimed and recycled for further processing, wherever it is possible.

Handling of the discards must be subordinated to the requirements of the Statute from the 27th April 2001 on discards (Journal of Law No. 62, pos. 628 with later amendments) and to the requirements of the Statute from the 27th April 2001, Right on Environment Protection (Journal of Law No. 62, pos. 627 with later amendments).

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14. INFORMATION ON THE TRANSPORT

The chemical composition (described in point 3) testifies on the fact that the consignment and the material in a packed form or in bulk are not dangerous in conformity with the designations IMDG, ICAO/IATA and ADR/RID.

15. INFORMATION ON LEGAL RULES

Classification of product and designation:
Symbol – is not the subject to classification

R return – none

S return - none

Regulation of the Minister of Health from the 13th November 2007 on the card of characteristics (Journal of Law 2007, No. 215, pos. 1588).

Regulation (WE) No. 1907/2006 of the European Parliament and Council from the 18th December 2006.

Regulation of the Minister of Labour and Social Policy from the 29th November 2002 in the matter of the highest permissible concentrations and intensities of factors to the health in the working environment (Journal of Law No. 217, pos. 1833).

Statute from the 27th April 2001 on discards (Journal of Law No. 62 pos. 628 with later amendments).

Statute from the 27th April 2001 Right on the Environmental Protection (Journal of Law No. 62 pos. 627 with later amendments).

Regulation of the Minister of Health from the 28th September 2005 in the matter of the dangerous substances together with their classification and marking (Journal of Law 05 No. 201 pos. 1674).

Regulation of the Minister of Health from the 2nd September 2003 in the matter of the criteria and the classification of chemical substances and preparations (Journal of Law 2003 No. 171 pos. 1666 with later amendments).

16. OTHER INFORMATION

The present card is the property of the (Huta "Łaziska" S.A. Steel – Works "Łaziska" Joint Stock Company) and it constitutes a description of the product of the Steel – Works on the basis of the knowledge an experience owned by the plant.