भारतीय मानक

Indian Standard

IS 3012 : 2023

क्रोम मैंगनीज — विशिष्टि

(दूसरा पुनरीक्षण)

Chrome Manganese — Specification

(Second Revision)

ICS 77.100

भारतीय मानक ब्यूरो
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Ores and Feed Stock for Iron and Steel Industry Sectional committee, MTD 13

FOREWORD

This Indian Standard (Second Revision) was adopted by Bureau of Indian Standards, after the draft finalized by Ores and Feed Stock for Iron and Steel Industry Sectional Committee had been approved by the Metallurgical Engineering Division Council.

The Standard was published in 1965 and subsequently revised in 1985. This revision has been brought out to bring the standard in the latest style and format of the Indian Standard.

Chrome manganese is mainly used for the production of austenitic stainless steel where part of nickel is replaced by manganese. The alloy is available with or without nitrogen.

The composition of the committee responsible for the formulation of this standard is listed in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CHROME MANGANESE — SPECIFICATION

(Second Revision)

1 SCOPE

This standard covers requirements for chrome manganese used in steel industry.

2 REFERENCE

The standards listed below contain provisions, which through references in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below.

IS No.	*Title*
IS 1387 : 1993	General requirements for the supply of metallurgical materials (*second revision*)
IS 1472 : 1977	Methods of sampling ferro-alloys for determination of chemical composition (*first revision*)

3 GRADES

Chrome manganese shall be of two grades, as specified in Table 1.

4 SUPPLY OF MATERIAL

General requirements relating to the supply of chrome manganese shall be as laid down in IS 1387.

5 CHEMICAL COMPOSITION

5.1 The chemical composition of the material when determined in accordance with any established instrumental/chemical method shall be as given in Table 1. In case of dispute the referee method shall be as agreed to between the supplier and the purchaser.

5.2 The supply of material of a composition with limits outside those specified in Table 1 shall be subject to agreement between the supplier and the purchaser.

6 NOMINAL SIZE RANGES

6.1 Chrome manganese is supplied in lumps or as crushed and screened particles. The undersize values shall be valid at the point of delivery to the purchaser.

Table 2 Particle Size
(*Clauses* 6.2)

Sl No.	Class	Particle Size Range *mm*	Undersize, *Max* Percent by Mass
(1)	(2)	(3)	(4)
i)	1	2 to 50	3
ii)	1A	20 to 50	10
iii)	2	2 to 25	5
iv)	3	Up to 2	−

NOTE — Maximum 10 percent by mass of oversize is allowed in all the classes and no piece shall exceed 1.15 times the maximum limit of size range specified in two or three directions.

6.2 If the purchaser requires different size ranges and or tolerances other than those given in Table 2, these shall be agreed upon between the supplier and the purchaser.

7 EXTRANEOUS CONTAMINATION

The material shall be reasonably free from extraneous contaminations like slag and non-metallic inclusions, etc.

8 SAMPLING

The material shall be sampled in accordance with IS 1472.

9 PACKING

The material shall be supplied packed in suitable containers in quantities mutually agreed to between the supplier and the purchaser.

10 MARKING

10.1 The material shall be marked with the following details:

a) Supplier’s name or trade-mark;
b) Grade, cast or lot and size distribution;
c) Quantity; and
d) Date of manufacture, if required.

10.2 BIS Certification Marking

The products(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provision of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product may be marked with the Standard Mark.

Table 1 Chemical Composition of Chrome Manganese
(*Clauses* 3, 5.1 *and* 5.2)

Sl No.	Grade	Composition, Percent								
(1)	(2)	(3) Chromium	(4) Manganese	(5) Silicon	(6) Nitrogen	(7) Carbon, *Max*	(8) Phosphorus, *Max*	(9) Sulphur, *Max*	(10) Aluminum, *Max*	(11) Iron
i)	Cr53Mn23	50.0 to 55.0	20.0 to 25.0	2.0 to 3.0	–	0.050	0.040	0.050	0.10	Remainder
ii)	Cr50Mn20N8	46.0 to 53.0	17.0 to 22.0	2.0 to 3.0	6.0 to 9.0	0.050	0.040	0.050	0.10	Remainder

ANNEX A
(*Foreword*)

COMMITTEE COMPOSITION

Ores and Feedstock for Iron and Steel Industry Sectional Committee, MTD 13

Organization	*Representative(s)*
National Mineral Development Corporation Limited, Hyderabad	SHRI RAJAN KUMAR **(*Chairperson*)**
Agni Steel Private Limited, Erode	SHRI A. RAJASEKARAN
Arcelor Mittal and Nippon steel India Limited, Visakhapatnam	DR ATANU RANJAN OJHA SHRI CH V. S. ND HARIPRASAD (*Alternate*)
Centre for Engineering and Technology (SAIL/CET), Ranchi	SHRI BRAJESH KUMAR SHRI D. K. JAGANI (*Alternate*)
CSIR - Institute of Minerals & Materials Technology, Bhubaneswar	DR ASHOK SAHU DR S. P. DAS (*Alternate*)
CSIR - National Metallurgical Laboratory, Jamshedpur	DR MANOJ KUMAR MOHANTA
Defence Metallurgical Research Lab, Hyderabad	DR CH R. V. S. NAGESH DR RANJAN KUMAR SINGH (*Alternate*)
Facor Alloys Limited, Vizianagaram	SHRI N.S.S. RAMA RAO SHRI R.BHASKARA RAO (*Alternate*)
Fomento Resources Private Limited, Gao	SHRI MAHENDRAMANGUESH RAMANI SHRI ABHIJIT PEDNEKAR RAMANI (*Alternate*)
Geological Survey of India, Kolkata	SHRI S. K. KAR DR SHIVDAS (*Alternate*)
Jai Balaji Group, Kolkata	SHRI D. SAHOO
Jindal Stainless Limited, Hissar	SHRI ASHISH GOYAL SHRI SUYASH TRIVEDI (*Alternate*)
JSW Steel Limited, Bellary	SHRI P. C. MAHAPATRA SHRI C. R. PRAMOD KUMAR (*Alternate*)
KIOCL Limited, Bengaluru	SHRI M. A. SALAM SHRI P. PALANI (*Alternate*)
Manganese Ore (India) Limited, Nagpur	SHRI. RAJESH BHATTACHARYA SHRIMATI SNEHA TIWAR (*Alternate*)
Mineral Exploration Corporation Limited, Nagpur	SHRI P. RAVINDRAN SHRI SANTOSH KUMAR SATAPATHY (*Alternate*)
Mitra S.K. Private Limited, Kolkata	SHRI SAJAL MITRA SHRI P. L. BOSE (*Alternate*)
M.N. Dastur & Co Limited, Kolkata	SHRI AVIJIT PODDAR
National Institute of Secondary Steel Technology, Mandi Gobindgarh	SHRI RAJIB KUMAR PAUL SHRI SANDEEP PAL SINGH (*Alternate*)
National Mineral Development Corporation Limited, Hyderabad	SHRI VIBHUTI ROSHAN
National Test House, Kolkata	DR S. K. KULSHRESTHA

Organization	*Representative(s)*
Pellet Manufacturer's Association of India, New Delhi	SHRI DEEPAK BHATNAGAR
Rashtriya Ispat Nigam Limited, Visakhapatnam	SHRI T. GOUTHAM SHRI R. MOHANTY (*Alternate*)
Shriram Institute for Industrial Research New Delhi	SHRI BALAN GOVIDAN SHRI SHAMBHU THAKUR (*Alternate*)
Sponge Iron Manufacturers Association, New Delhi	SHRI D. KASHIVA
Tata Steel, Jamshedpur	DR A. K. MUKHERJEE
BIS Directorate General	SHRI SANJIV MAINI, SCIENTIST 'F'/ SENIOR DIRECTOR AND HEAD (METALLURGICAL ENGINEERING) [REPRESENTING DIRECTOR GENERAL (*Ex-officio*)]

Member Secretary
SHRI G. RAM SAI KUMAR
SCIENTIST 'B'/ ASSISTANT DIRECTOR
(METALLURGICAL ENGINEERING), BIS

Ferroalloys Subcommittee involved in the Finalization-MTD 13:01

Organization	*Representative(s)*
Indira Gandhi Centre for Atomic Research, Kalpakkam	DR M. VASUDEVAN **(*Convener*)**
Bhabha Atomic Research Centre, Mumbai	DR BIKAS CHANDRA MAJI
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CSIR - National Metallurgical Laboratory, Jamshedpur	DR SANJAY AGARWAL DR DAYANAND PASWAN (*Alternate*)
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Facor Alloys Limited, Vizianagaram	SHRI N. S. S. RAMA RAO SHRI R.BHASKARA RAO (*Alternate*)
Indian Ferro Alloy Producers Association, Mumbai	SHRI TANMAYA KUMAR PATTNAIK
Indian Metals & Ferro Alloys Limited, Bhubaneswar	SHRI DINESH KUMAR MOHANTY
Jindal Stainless Limited, Hissar	SHRI ASHISH GOYAL SHRI SUYASH TRIVEDI (*Alternate*)
JSW Steel Limited, Karnataka	SHRI C.R.PRAMOD KUMAR
Midhani, Hyderabad	DR RAJASEKHAR
Manganese Ore (India) Limited (MOIL), Nagpur	SHRI RAJESH BHATTACHARYA SHRIMATI SNEHA TIWAR (*Alternate*)
Tata Steel Limited, Jamshedpur	DR A. K. MUKHERJEE

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This Indian Standard has been developed from Doc No.: MTD 13 (20888).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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