



YASH REFRACTORIES



Material Safety Data Sheet - Castable 90%

Date of issue: 01/11/2017

Revision date: 01/11/2019

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
 Product name : Castable 90%
 CAS No : 142844-00-5
 Product code : 0153
 Other means of identification : Alumina Castable

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Refractory

1.3. Supplier

Yash Refractories
 402, Unnati Tower, Central Spine,
 Vidhyadhar Nagar, Jaipur (Raj), India
 +91-141-51100083
info@yashrefractories.com - www.yashrefractories.com

1.4. Emergency telephone number

Emergency number : EMERGENCY ONLY (YASH) USA & Canada +91-141-5110083
 Outside USA & Canada +91-9799179300

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2B	H320	Causes eye irritation
Carcinogenicity Category 1A	H350	May cause cancer (Inhalation)

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

Hazard statements (GHS-US)

Precautionary statements (GHS-US)

: Danger
 : H315 - Causes skin irritation
 : H320 - Causes eye irritation
 : H350 - May cause cancer (Inhalation)
 : P280 - Wear eye protection, Dust respirator, protective gloves
 : P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 : P332+P313 - If skin irritation occurs: Get medical advice/attention
 : P337+P313 - If eye irritation persists: Get medical advice/attention
 : P260 - Do not breathe dust

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	20 - 50	Carc. 1A, H350
Portland cement	(CAS No) 65997-15-1	20 - 50	Not classified
Cristobalite	(CAS No) 14464-46-1	1 - 5	Carc. 1A, H350

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- First-aid measures after eye contact : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/injuries after inhalation : May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.
- Symptoms/injuries after skin contact : Causes skin irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.
- Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical

- Fire hazard : Not flammable.
- Reactivity : Hydraulic setting.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Do not breathe dust.

6.1.2. For emergency responders

- Protective equipment : Equip cleanup crew with proper protection.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Avoid raising dust. Avoid contact with skin and eyes. Do not breathe dust.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store this product in a dry location where it can be protected from the elements.
- Incompatible products : Strong bases. Strong acids.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

cristobalite (14464-46-1)		
ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ respirable dust
OSHA	OSHA PEL (TWA) (mg/m³)	0.05 mg/m³ respirable dust
Portland cement (65997-15-1)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (Portland cement; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction. The value is for particulate matter containing no asbestos and < 1% crystalline silica)

quartz (14808-60-7)

ACGIH	ACGIH TWA (mg/m³)	0.025 mg/m³ (Silica-Crystalline Quartz; USA; Time-weighted average exposure limit 8 h; TLV - Adopted Value; Respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	0.05 mg/m³ Respirable fraction

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment**Personal protective equipment:**

Avoid all unnecessary exposure.

Hand protection:

Wear protective gloves

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear appropriate mask

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

Physical state	: Solid
Appearance	: Granular mixture.
Color	: Gray
Odor	: Earthy Odor
Odor threshold	: Not applicable
pH	: No data available
Melting point	: > 1500 °F
Freezing point	: Not applicable
Boiling point	: Not applicable
Critical temperature	: Not applicable
Critical pressure	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: Not applicable
Relative evaporation rate (ether=1)	: Not applicable
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: Not Applicable
Vapor pressure at 50 °C	: Not Applicable
Relative vapor density at 20 °C	: No data available
Relative density	: ≈ 0.6
Solubility	: Moderately soluble in water.
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity	: Not Applicable
Viscosity, kinematic	: Not Applicable
Viscosity, dynamic	: Not Applicable
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity**10.1. Reactivity**

Hydraulic setting.

10.2. Chemical stability

Not established.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Avoid dust formation.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: May cause cancer (Inhalation).

cristobalite (14464-46-1)

IARC group	1 - Carcinogenic to humans
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quartz (14808-60-7)

IARC group	1 - Carcinogenic to humans
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Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified

Specific target organ toxicity – repeated exposure	: Not classified
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Aspiration hazard	: Not classified
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Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
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Symptoms/injuries after inhalation	: May cause cancer by inhalation. Danger of serious damage to health by prolonged exposure through inhalation.
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Symptoms/injuries after skin contact	: Causes skin irritation.
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Symptoms/injuries after eye contact	: Causes eye irritation.
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SECTION 12: Ecological information**12.1. Toxicity****Portland cement (65997-15-1)**

LC50 fish 1	> 1000 mg/l (LC50; 96 h)
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12.2. Persistence and degradability**Castable #16 (Mixture)**

Persistence and degradability	Not established.
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cristobalite (14464-46-1)

Persistence and degradability	Biodegradability: not applicable.
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Biochemical oxygen demand (BOD)	Not applicable
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Chemical oxygen demand (COD)	Not applicable
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ThOD	Not applicable
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Portland cement (65997-15-1)

Persistence and degradability	Biodegradability: not applicable. No (test) data on mobility of the substance available.
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Biochemical oxygen demand (BOD)	Not applicable
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Chemical oxygen demand (COD)	Not applicable
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ThOD	Not applicable
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quartz (14808-60-7)

Persistence and degradability	Biodegradability: not applicable. No (test) data on mobility of the substance available.
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Biochemical oxygen demand (BOD)	Not applicable
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Chemical oxygen demand (COD)	Not applicable
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12.3. Bioaccumulative potential

Castable #16 (Mixture)

Bioaccumulative potential	Not established.
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cristobalite (14464-46-1)

Bioaccumulative potential	No bioaccumulation data available.
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Portland cement (65997-15-1)

Bioaccumulative potential	Bioaccumulation: not applicable.
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quartz (14808-60-7)

Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming	: No known effects from this product. None known
GWPmix comment	: No known effects from this product.
Other information	: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

TDG

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

cristobalite (14464-46-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

quartz (14808-60-7)

Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

Castable #16 (Mixture)

U.S. - California - Proposition 65 - Other information	This product contains crystalline silica, a chemical known to the state of California to cause cancer.
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cristobalite (14464-46-1)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

quartz (14808-60-7)

U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Non-significant risk level (NSRL)
Yes	No	No	No	

cristobalite (14464-46-1)

U.S. - New Jersey - Right to Know Hazardous Substance List

quartz (14808-60-7)

U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

Other information

: Report language name. English. In the event of any conflict between English and other language versions, the English version shall prevail.

Full text of H-phrases:

H315	Causes skin irritation
H320	Causes eye irritation
H350	May cause cancer

SDS US (GHS HazCom 2012)

This information and recommendations set forth herein are taken from sources believed to be accurate as of the date herein, however, Yash Refractories. makes no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assumes no liability to any user thereof.





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Established in the year 1985, at Jaipur, Rajasthan, India, we “**Yash Refractories,**” are an **ISO 9001-2008** organization engaged in manufacturing and exporting of a wide range of Consumables/Refractories for Steel Industries. Across the globe to **Riyadh, Jeddah, Kuwait, Uganda, Mombasa, Nairobi, Angola, Indonesia, South Africa, Cameroon, Bangladesh , Australia among others.**

With an aim to supply quality range of steel refractories and consumables, we have set up advanced manufacturing unit which is further handled by experienced professionals.

They have in-depth experience and process knowledge which further helps in enhancing the productivity of our products. It is their sincere effort and hard work which further helped us in carving a niche for ourselves in this domain.

COMPANY PROFILE	
Nature of Business	MANUFACTUTER & EXPORTER
Year of Establishment	1985
Ownership Type	Professional Association
Total No. of Employees	45 to 50
Statutory Profile	
Permanent Account No.	AAFY6843K
DGFT/IEC Code	1307005268
VAT Registration No	08811664045
Service Tax Registration No	AAFY6843KST001
Dun & Brandsheet No	65-035-8554
CAPEXIL Certificate No	CAPEXIL/N/00410



PRODUCTS FOR INDUCTION FURNACE, LADLE , CCM AND ARC FURNACE	
Silica Ramming Mass	Magnesite (Basic) Ramming Mass
Bottom Poring Sets (B.P. Sets)	High Alumina Bricks (Standard , Side and End Arch)
Boric Acid	WhytHeat Cement “A” & “K”
Silica Tundish Boards/Magnesite Tundish Boards/Spray Mass	Garpack and Garseal
Radex Powder	Noozle X Powder (Silica and Zircon Base)
Casting Powder	Rapseed Oil
Asbestos Sheets/ Cloth /Rope	Lancing Pipe
Silico Manganese (Grade 60/14 ; Grade 65/15)	High Carbon Ferro Manganese (Grade 70 % Mn & 75 % Mn)
Ferro Silicon (Grade 75 % Si)	Copper Mould Tubes
Slide Gate Refractories (Tundish Nozzle, Tundish Well Block, Ladle Nozzle, Ladle Well Block,Porous Plug, Porous Plug Well Block)	Sodium Silicate
Fire Clay	Ingot Moulds
Bottom Plate, Centre Column,Slag Pot	Magnesia Carbon Bricks
Sponge Iron	Cranes, CCM and furnace spares and parts
Alumina Mortars and Castables	Rolls and Rolling Mills/ Spares and parts
Magnesium Carbon Bricks	Graphite Powder





- Project Works (Design, Implementation, Maintenance)
- Recruitment for Steel Plants
- Consultancy for Steel Production Management



We are supported by experienced professionals, who work with a common aim of gaining maximum clients trust. Their coordinated work process helps in understanding the requirement of our clients better. We have the below mentioned professionals working with us:

- Procuring agent
- Technicians
- Quality auditors

- Research and development personnel
- Warehouse and packaging experts
- Sales and marketing personnel



The procuring agents working with us thoroughly surveys the market and select trusted and reputed vendors from where we can procure our products. Other than this, we have experienced quality auditor who stringently monitors our wide range of Refractory Products in order to deliver zero defect products. Above all, our sales and marketing personnel assists us in collecting information regarding the requirement of prospective clients and subsequently help us in catering our wide product range in an effective manner.



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AFFILIATE CODE: F290101

30th October 2017

SGS Ref: 2000-4392

YASH REFRACTORIES, INDIA

REPORT

Our Principals

Declared Commodity

Declared Quantity

Place of Inspection

Date of Inspection

YAS REFRACTORIES, INDIA

Ferro Silico Manganese in Bulk Bags

108 mt

Grindrod Intermodal, 6 Bluff Road, Jacobs, Durban, South Africa

17th October 2017

In accordance with the instructions received from our Principals, YASH REFRACTORIES, INDIA, we performed sampling, weighing, sealing of sampled bags and analysis on bags of Ferro Silico Manganese.

We report as follows:

Consignment

Ferro Silico Manganese in bulk bags.

On which we report :

Description

On visual inspection of the contents at the top of the bag when it was opened, we noted that it was light grey in colour and appeared fine and free-flowing.

Sampling

As per the clients request 20% of the 108 bags was to be randomly selected and sampled. 22 of the bags were identified and the warehouse removed these bags from the stack and placed them on the floor for SGS to sample. Sampling was done using a stainless steel scoop by digging into the bags and removing the top layers aside and taking 1 increment. The sample taken was place in a clean plastic bag and sealed to avoid moisture variation. The samples were labelled and upon completion of sampling, the sealed samples were sent to SGS sample preparation room for sample preparation. Prepared samples were sent to the laboratory for analysis. Sampled bags were sealed with a SGS seal.



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YASH REFRACTORIES, INDIA

REPORT

Moisture Determination

Moisture determination was done at SGS facility by placing samples in duplicate lot in a drying oven with a fixed temperature of 105 °C +/- 5°C until constant weight is obtained.

We report the following:

The average moisture of the samples taken from 22 bags was **0.06%**.

Analysis:

Lab Ref: TR17-03517	Si	P	Mn	MnO ₂	C
SCHEME	ICP90A	ICP90A	CON15V	CON15V	CSA01V
UNITS	%	%	%	%	%
SAMPLE	11.5	0.22	70	110.7	2.74

Photos:



Bags in stack



Label on bag



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REPORT



Size of cargo



seal attached to sampled bag

Signed in Durban, South Africa
For and On Behalf of SGS South Africa
On the 30th October 2017





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SPECIFICATION for Lancing Pipes

1. Manufacture

- This Indian Standard was adopted by the Indian Standards Institution on 30 November 1982, after the draft finalized by the Steel Tubes, Pipes and Fittings Sectional Committee had been approved by the Structural and Metals Division Council.
- This Indian Standard has been prepared to meet the requirements of lancing pipes used by steel industry.
- Requirements for ceramic and other special coating to enhance the life of the pipes will be added in due course after collecting the necessary data.
- This standard contains clauses 2.4, 11.1 and 12.1 which call for agreement between the purchaser and the manufacturer.
- 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 : 2-1960. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

2. Scope

- This standard covers the requirements of butt-welded, screwed and socketed and plain end mild steel pipes intended for use on oxygen lancing.

3. Terminology

- For the purpose of this standard, the following definitions shall apply.
- For the purpose of this standard, the following definitions shall apply.
- **Black Pipe** - Pipe as manufactured, but without any subsequent surface treatment.
- **Length of Screwed and Socket Pipe** - The length of the pipe inclusive of the socket.
 - o **Note 1.** The length of the pipe inclusive of the sockets means the pipe length measured with socket fitted at one end to handling-tight.

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o **Note 1.** Handling tight means that the socket is so tight fitting that it should not fall down during handling or transit.

- **Nominal Bore** - A size reference denoting the approximate bore of the pipe. For each size of pipe, the outside diameter is fixed by the corresponding screw thread dimensions of IS: 554-1975 and therefore, the actual bore of each size of pipe will vary according to the thickness.
- **Random Length** - Normal manufacturing lengths which may vary over a range of several meters. Alternatively, a length range agreed to between the purchaser and the manufacturer.
- **Socket** - The screwed coupling utilized in joining the pipes together.
 - o **Note 1.** The term 'socket' is synonymous with the term 'coupler'.
- **Pipe (Tube)** - A long, hollow, open-ended object of circular or other cross-section. The term 'pipe' is synonymous with the term 'tube'.

4. Designation

- Mild steel pipes covered by this standard shall be designated by their nominal bore, and shall be further classified as 'light', 'medium' and 'heavy' depending on the wall thickness.
- Mild steel socket shall be designated by the respective nominal bore of the pipe for which it is intended.

5. Supply of Material

- General requirements relating to the supply of mild steel pipes and sockets shall conform to IS :1387-1967.
- Lancing pipes shall be supplied with any of the following combinations as specified by the customer:
 - Plain end, and
 - Both ends screwed and one end socket

6. Manufacture

- Pipes shall be manufactured from mild steel made by open hearth, electric or any of the oxygen processes.

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- Steel pipes and sockets shall be manufactured by one of the following processes:
 - Continuous oxy-acetylene gas welded pipes (OAW),
 - Electric resistance welded (ERW),
 - High frequency induction welded (HFIW), and
 - Hot-finished welded (HFW).
- o **Note 1.** Pipes made by manual welding are not covered by this specification.
- o **Note 2.** Hand welding of sockets may be permitted provided the test requirements for the sockets covered by the standard are complied with.
- o **Note 3.** Sockets may also be manufactured from rods provided the test requirements for the sockets covered by the standard are complied with.

7. Dimensions

- The dimensions of pipes shall be in accordance with Table 1,2 and 3 subject to the tolerances permitted in 8. Dimensions of sockets shall be in accordance with Table 4.

8. Mass

- Nominal masses of 'light', 'medium', and 'heavy' black pipes shall be as specified in Table 1,2 and 3 respectively.

Table 1. Dimensions and Nominal Masses of Black Steel Pipes (Light)					
Nominal Bore	Outside Diameter		Thickness	Mass of Black Pipes	
mm	Max (mm)	Min (mm)	mm	Plain End (kg/m)	Screwed and Socketed (kg/m)



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6	10.1	9.7	1.8	0.361	0.364
8	13.6	13.2	1.8	0.517	0.521
10	17.1	16.7	1.8	0.674	0.680
15	21.4	21.0	2.0	0.952	0.961
20	26.9	26.4	2.35	1.41	1.42
25	33.8	33.2	2.65	2.01	2.03

Note-Dimensions and masses are in accordance with ISO 65-1981.

Table 2. Dimensions and Nominal Masses of Black Steel Pipes (Medium)

Nominal Bore	Outside Diameter		Thickness	Mass of Black Pipes	
	Max (mm)	Min (mm)		Plain End (kg/m)	Screwed and Socketed (kg/m)
6	10.6	9.8	2.0	0.407	0.410
8	14.0	13.2	2.35	0.650	0.654
10	17.5	16.7	2.35	0.852	0.858
15	21.8	21.0	2.65	1.22	1.23
20	27.3	26.5	2.65	1.58	1.59

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25	34.2	33.3	3.25	2.44	2.46
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Note-Dimensions and masses are in accordance with ISO 65-1981.

Table 3. Dimensions and Nominal Masses of Black Steel Pipes (Heavy)

Nominal Bore	Outside Diameter		Thickness	Mass of Black Pipes	
	Max (mm)	Min (mm)		Plain End (kg/m)	Screwed and Socketed (kg/m)
6	10.6	9.8	2.65	0.493	0.496
8	14.0	13.2	2.9	0.769	0.773
10	17.5	16.7	2.9	1.02	1.03
15	21.8	21.0	3.25	1.45	1.40
20	27.3	26.5	3.25	1.90	1.91
25	34.2	33.3	4.05	2.97	2.99

Note-Dimensions and masses are in accordance with ISO 65-1981.

Table 4. Dimensions of Sockets

Nominal Bore	Outside Diameter (min)	Length (min)
6	15	19
8	18	27



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10	22	28
15	27	37
20	32.5	39
25	39.5	46

9. Tolerances on Thickness and Mass

- The following manufacturing tolerances shall be permitted on the pipes and sockets:

1	Thickness	Light pipes Medium and heavy pipes	± Not limited 8 percent ± Not limited 10 percent
2	Masses (No limit on + side)	Light pipes Medium and heavy pipes For quantities per load of 10 tones, Min (light series) For quantities per load of 10 tones, Min (medium & heavy series)	± Not limited 8 percent ± Not limited 10 percent - 5 percent - 7.5 percent

Note 1. For the purpose of weighting lots of 10 tones or more, the material may be divided into convenient sub-lots and weighted separately. Finally the tolerance may be applied to the total weight of lot.

10. Joints

- All screwed tubes and sockets shall be supplied with pipe threads conforming to IS : 554-1975. Gauging practice shall be in accordance with IS : 8999-1979.
- Unless specified otherwise, pipes shall be supplied screwed with taper threads and sockets with parallel threads.

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YASH REFRACTORIES



- However, in the case of 'light' tubes, the application of taper pipe threads may be modified by permitting the outside diameter of the pipes to be within the limits shown in col 2 and 3 of Table 1. Where the pipe approaches the lower limit of outside diameter, some incomplete threads (perfect at root and imperfect at the crest) may be expected from and beyond the gauge plane. Such incomplete threads shall not be regarded as justification for rejection of the pipes. Also the minimum length of threads in 'light' pipes shall be 80 percent of that specified in IS : 554-1975.

- Each pipe shall be supplied with one socket and one plastic protective ring. The ends of sockets shall be chamfered internally to prevent damage to the leading thread. Tapping of sockets shall be done from one end only.

11. Lengths

Random Length - The pipes shall be supplied in random lengths from 4 to 8 meters, unless otherwise agreed to between the manufacturer and the purchaser.

12. Hydraulic Test

- The pipes shall be supplied in random lengths from 4 to 8 meters, unless otherwise agreed to between the manufacturer and the purchaser.
- Pipes shall withstand a test Pressure of 5 MPa (see NOTE) without showing defects of any kind. The pressure shall be applied by approved means and maintained sufficiently long for proof and inspection. The testing apparatus shall be fitted with an accurate pressure indicator, and provision shall be made for its accuracy to be verified by the purchaser, if required.

Note - 1 MPa = 0.102 kgf/mm² 10.2 kgf/cm²

13. Test on Finished Pipes and Sockets

- The following tests shall be conducted by the manufacturer on finished pipes and sockets.
- The tensile strength of length, cut from selected pipes when tested in accordance with IS : 1894-1972 shall be at least 320 MPa
(320 N/mm²)
- The elongation percentage on a gage length of $5.65\sqrt{S_0}$ (where S_0 is the original cross-sectional area of the test specimen) shall be not less than 12 percent.

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- **Bend Test on Pipes** - When tested in accordance with IS :2329-1963, the finished pipes shall be capable of withstanding the bend test without showing any signs of fracture or failure. The pipes shall be bent with the weld at 90° to the plane of bending. The pipes shall not be filled for this test. When tested in accordance with IS :2329-1963, the finished pipes shall be capable of withstanding the bend test without showing any signs of fracture or failure. The pipes shall be bent with the weld at 90° to the plane of bending. The pipes shall not be filled for this test.

- **Expansion Test on Sockets** - At the option of the manufacturer any one of the tests described in bellow.

Drift Expanding Test - It shall be carried out on sockets, blacks for sockets in accordance with IS : 2335-1963 on a conical mandrel having an include taper on diameter 1 in 16 and the minimum increase in outside diameter after expansion shall be 2 percent.

Taper Screw Plug Test - Sockets shall be capable of withstanding the expansion test as described below without showing any sign of fracture or failure. The test shall consist of screwing the selected socket on a taper screw plug.

The threads of the socket shall be thoroughly clean and free from foreign matter. Should the threads show sign of burr, this shall be removed by rotating the socket with both hands. The socket shall then be further rotated five complete turns beyond hand tightness, either by means of a pipe wrench of an adequate length to operate the test with gradual turning or by a power machine giving an appropriate leverage. The wrench shall not be hammered. The Plugs shall be manufactured from steel and shall be hardened to give a Vickers hardness between 700 and 800 HV when determined by applying a load of 30kgf in accordance with IS :1501-1968. The plugs shall be in accordance with the dimensions given in Table 5. The thread shall be ground after the plugs are case hardened, and the thread form and angle of taper shall be in accordance with the appropriate dimensions and tolerances specified in IS :554-1975.

For routine testing, use may be made, if so desired, of unhardened steel plugs in accordance with dimensions given in Table 5 and having 1975.

In cases of dispute, however, the test shall be carried out with the hardened plugs specified in above

14. Workmanship

- The pipes shall be cleanly finished and reasonably free from scale. They shall be reasonably straight, free from cracks, surface flaws, laminations and other defects. The screw threads of screwed pipes and sockets shall be clean and well cut. The ends shall be cut cleanly and square with the axis of the pipe.

15. Sampling of Tubes and Sockets



YASH REFRACTORIES



- **Lot** - For the purpose of drawing samples, all lancing pipes bearing the same designation and weight classification and also manufactured under a single process shall be grouped together to constitute a lot. Each lot shall be sampled separately and assessed for conformity to this specification.
- **Sampling and Criterion for Conformity** - Unless otherwise agreed to between the manufacturer and the purchaser the procedure for sampling of pipes for various tests and criteria for conformity shall be as given in IS : 4711-1974.

16. Marking

- Each pipe or each bundle of pipes shall carry legibly the manufacturer's name or trade-mark.
- The different classes of pipes shall be distinguished by color bands which shall be applied as follows before the pipes leave the manufacturer's works:
- Light' pipes Yellow 'Medium' pipes Blue 'Heavy' pipes Red
- The pipes or each bundle of pipes may also be marked with the ISI Certification Mark.

Note 1. The use of the ISI Certification Mark is governed by the provision of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made the reunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a license for the use of the ISI Certification Mark may be granted to manufactures or processors, may be obtained from the Indian Standards Institution.

Normal Bore(mm)	Gauge Diameter(mm)	Threads per 25.4 mm	Tolerance on Total Number of Threads	A	B	C	D
6	9.728	28	2	1.8	13	11	7
8	13.157	19	2	2.8	19	13	10

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10	16.662	19	2	2.8	19	16	13
15	20.955	14	2	3.6	25	19	14
20	26.441	14	2	3.6	25	29	17
25	33.249	11	2	4.6	32	29	21

17. Packing

- Unless otherwise agreed to between the manufacturer and the purchase, the pipes shall be bundled for the transport and packed in accordance with IS: 4740 1979. However, the pipes of same size and class shall be bundled together and the capped ends shall be protected by gunny cloth. Each smallest bundled shall contain preferably not more than 20 pipes.

18. Coating

- The lancing pipes:
 - a) Shall have no internal coating,
 - b) Shall be free from grease and oil, and
 - c) May be externally coated as specified by the purchaser.

19. Enquiry and Order

- The following information shall be furnished by the consumer while ordering the pipes:
 - a) Class of pipe,
 - b) Nominal bore,
 - c) Length,

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d) End condition, and

e) Packaging requirements.

As we aware that refractory products play a major role in furnace. We are able to serve the material for 8, 10 15, 20, 30 MT furnace. Our own R&D division gives new opportunity to build high standard of production. We believe in quality product service with time bound efforts.

Our administrative team makes international business easier for our prestigious clients. As required we can provide onsite technical staff to resolve furnace related queries.

We are established in the year 1985, at Jaipur, Rajasthan, India, We “Yash Refractories,” are an ISO 9001-2008 organization engaged in manufacturing and exporting of a wide range of Furnace Consumables.

With an aim to supply quality range of Furnace, Foundry Equipment and Material Handling Systems, we have set up advanced manufacturing unit which is further handled by experienced professionals.

They have in-depth experience and process knowledge which further helps in enhancing the productivity of our products. It is their sincere effort and hard work which further helped us in carving a niche for ourselves in this domain.

With best regards,

Vikas

Address: 402 - Unnati Tower, Central Spine, Vidhyadhar Nagar, Jaipur
(Raj). India

Certificate N°: 1703170555



Page N°: 1/ 3

ANALYSIS CERTIFICATE

REF: ORDER NO.2001898

DATE: 18.03.2017

In pursuance of an order received from and on behalf of M/s. Yash Refractories, We attended the inspection of 100MT Ferro Silico Manganese and report as under.

BENEFICIARY : YASH REFRACTORIES
402, UNNATI TOWER, CENTRAL SPINE,
VIDHYADHAR NAGAR
JAIPUR INDIA.

APPLICANT : METEK METAL URETIM TEKNOLOJISI
SANAYI VE TICARET LTD STI
MIMAR SINAN MAH. MIMAR SINAN CAD.
NO:5 D.17 CEKMEKOY/ISTANBUL.

TRANSACTION REFERENCE NUMBER AND DATE : 331.20198.56 DATED 170127

AMENDMENT NO. 1 AND 2, DATE : 170223 AND 170315

DESCRIPTION OF GOODS : FERRO SILICO MANAGESE

QUANTITY : 100.000 MTS.

PACKING : IN 1 MT SUPER JUMBO BAGS.

PLACE AND DATES OF ATTENDANCE : On 03.03.2017 for sampling, size analysis, sample preparation and on 07.03.2017 for Truck loading and weighment supervision at manufacturer's factory premises, Raipur.
On 08.03.2017 & 09.03.2017 for Truck unloading supervision and on 10.03.2017 container stuffing & sealing supervision at ICD, Nagpur.



SGS India Private Limited

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Certificate N°: 1703170555

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REF: ORDER NO.2001898

DATE: 18.03.2017

Upon arrival at the place of inspection, the cargo of Ferro Silico Manganese was offered in one lot of 100mt for our inspection in duly packed condition in 1MT Bags and stacked under covered shed at the inspection place.

SAMPLING:

Manual sampling was carried out following the sampling scheme of ISO-4551-1987, ISO-3713-1987 & ISO-4552-1-1987 from the top of randomly selected big bags and requisite numbers of increments were collected for size and chemical analysis. Composite Samples were further processed to obtain quality samples for chemical analysis as per SOP No. SO/IN/MINE/TE-024/VER1.0/11.08.14.

A total of five sample packets were prepared for quality at Manufacturer plant premises on 03.03.2017 and sealed with our plastic strip seals and distributed. One sealed sample packet of seal no. 0065141 was handed over to manufacturer and one sample packet of seal no.0065144 was submitted to laboratory for analysis and remaining sample packets of seal no. 0065142, 0065143 & 0065145 were kept with us for future reference of two months until and unless definite instructions to the contrary received in the meantime.

The manual sampling method was agreed with the SGS Principal, as sampling by more reliable methods that provide probability samples was not possible. The Holder of this document is cautioned that collected MANUAL samples of this type do not satisfy the minimum requirements for probability sampling, and as such cannot be used to draw statistical inferences such as precision, standard error, or bias.

BIG BAGS SEALING:

All 100 jumbo bags were sealed at mouth by individually numbered plastic seals bearing nos. 108701 to 108800.

SIZE ANALYSIS:

Gross composite sample was passed through the sieves of 10 mm and 80 mm size and the results ascertained are as under:

Size	Results obtained
- 10 MM	4.18 PCT (Four Decimal One Eight)
+ 80 MM	3.52 PCT (Three Decimal Five Two)
10 to 80 MM	92.30 (Ninety Two Decimal Three Zero)



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Certificate N°: 1703170555

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REF: ORDER NO.2001898

DATE: 18.03.2017

CHEMICAL ANALYSIS:

One sealed sample packet was submitted to our laboratory for chemical analysis and the results are as under:

Test Parameters	Test Protocol	Results Obtained
Mn	IS:1559 – 1961 Reaff: 2012	66.70 PCT (Sixty Six Decimal Seven Zero)
Si	IS:1559 – 1961 Reaff: 2012	17.25 PCT (Seventeen Decimal Two Five)
C	ASTM E 1019-2011	1.650 PCT (One Decimal Six Five Zero)
P	IS:1559 – 1961 Reaff: 2012	0.200 PCT (Zero Decimal Two Zero Zero)

CONTAINER STUFFING SUPERVISION : Prior to stuffing, the cleanliness of the containers were visually examined and found to be satisfactory. The material which was manually packed into big bags, placed inside containers and such 04 X 20' containers were stuffed in our presence.

Sl. No.	Container No.	No. of Bags	SGS Seal Number
1.	TGHU 0594759	25	0064200
2.	MSKU 3774480	25	0064196
3.	MSKU 7399407	25	0064198
4.	MRKU 7059154	25	0064197
	TOTAL=	100Bags	

WEATHER CONDITION: Sunny/Fair.

"The findings of the stored Goods inspection contained herein (the "Findings") strictly relate to and cover examination of part or parts of the Goods safely accessible for inspection in accordance with the client's instructions. The Findings only relate to the time and place of inspection and do not constitute nor are intended to constitute evidence of the existence of part or all of the Goods prior to and after the time of inspection. SGS does not control the storage place of the Goods nor has any responsibility for the storage, custody and safety of the Goods. SGS does not guarantee nor make any representation about i) the accuracy and authenticity of the documents presented by the operator of the storage place (if any); ii) ownership of and title to the Goods; iii) quantity and quality of the Goods. SGS accepts no liability for the consequences of any action taken or not taken on the basis of this certificate/report." The above reflects our findings at time and place of inspection. This certificate does not relieve Sellers/Suppliers from their contractual responsibilities nor does prejudice buyer's right of claim towards Seller/Supplier for compensation for any apparent and/or hidden defects not detected during our random inspection or occurring thereafter.



For SGS India Pvt. Ltd.



SGS India Private Limited

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YASH REFRACTORIES



Administrative Office: 402, Unnati Tower, Central Spine, Vidhyadhar Nagar, Jaipur-302012 (Raj), India

WHYTHER CEMENT (ALUMINUM CASTABLE)

We manufacture and supply high quality WhytHeat Cement (Alumina Dense Castable) with the Brand name of YR-CAST-90, 70 & 50 respectively. These are generally used to form strong joints and are applied extensively in building material, metallurgy, and petrochemical industries. Our Castables are very cost effective. The shelf life of WhytHeat castables is six to nine months under ideal storage conditions. WhytHeat castables are available in HDPE packages of 50kg.

1. (YR-CAST-90): WhytHeat A 90% Alumina Dense Castable:

WhytHeat-A is a high purity, high alumina castable of exceptional quality with alumina content of 85-90% and with very low silica and iron contents. Hence, it is used for service temperatures up to 1750°C and can resist attack from process gas atmospheres containing carbon monoxide and hydrogen.

WhytHeat-A is particularly suitable for use in coke ovens, gas production plants as well as gasification plants and is also used:

- in the iron and steel industry for lining blast furnaces and for skew backs, ports and roof lining of arc-melting furnaces
- in the non-ferrous metal industry to line reverberatory furnaces where high purity aluminum is produced
- in reactors of refineries as well as in fertilizer plants where castables with a high degree of resistance to carbon monoxide, hydrogen and ammonia are desired
- for lining of pre-heaters/converters and on all transfer lines

TECHNICAL SPECIFICATION

(YR-CAST-90)

Product Type	(YR-CAST-90) WhytHeat A
Nature of Bond	Hydraulic
Installation	Vibration Casting
General Properties	
Max. Service Temperature	1700° C
Maximum Grain Size	5 mm
Water Required For Casting	8.0-10.0%
Chemical Analysis %	Typical Value
Al ₂ O ₃	85-90
Fe ₂ O ₃	0.8- 1.5
CaO	5.5 - 6.5
Physical Properties	
Bulk density	g / cc
After drying at 110°C/24 hrs	2.65 - 2.80
CCS, kg/cm ² After drying at 110°C/24hrs	600 - 700
After heating at 1100°C/3 hrs	300 - 400
After heating at 1550°C/3 hrs	650 - 800
% retained on max. size	0-5
Thermal Properties	
Refractoriness, Orton / °C	+37/1820
PLC%	
After heating at 1100°C/3 hrs	-0.40 TO +0.20
After heating at 1550°C/3 hrs	-1.00 TO -2.50
Packaging	50 Kg Bags
Storage life	6 Months
Delivery state	Dry

2. (YR-CAST-70): WhytHeat K 70% Alumina Dense Castable:

WhytHeat-K, which has an alumina content of 70%, can be used for service temperatures up to 1600°C. This castable also has a low iron content and can resist carbon monoxide attack.

WhytHeat-K can be used in:

- blast furnaces
- foundries
- boiler industry stoker arches
- locations where reducing atmospheres are encountered
- construction of soak pit covers, forge furnaces, tunnel kilns, heat treatment furnace car tops as well as electro-phosphorus furnaces

TECHNICAL SPECIFICATION

(YR-CAST-70)

Product Type	(YR-CAST-70) WhytHeat K
Nature of Bond	Hydraulic
Installation	Vibration Casting
General Properties	
Max. Service Temperature	1600° C
Maximum Grain Size	5 mm
Water Required For Casting	10-11%
Chemical Analysis %	Typical Value
Al ₂ O ₃	70.20
Fe ₂ O ₃	5.10

CaO	5.45
Physical Properties	
Bulk density	g / cc
After drying at 110°C/24 hrs	2.55
CCS, kg/cm ² after drying at 110°C/24hrs	380
After heating at 1100°C/3 hrs	250
After heating at 1400°C/3 hrs	430
% retained on max. size	0.8
Thermal Properties	
Refractoriness, Orton / °C	+31 /1683
PLC%	
After heating at 1100°C/3 hrs	-0.12
After heating at 1400°C/3 hrs	-0.7
Packaging	50 Kg Bags
Storage life	6 Months
Delivery state	Dry

3. (YR-CAST-50): WhytHeat K 50% Alumina Dense Castable:

WhytHeat-C is a castable with about 50% alumina and serves as a general purpose high temperature castable required for service temperatures up to 1500°C.

WhytHeat-C is suitable for use in:

- the iron and steel industry
- semi-permanent foundries
- annealing furnaces
- stress relieving furnaces
- construction of special refractory shapes, monolithic convection sections in water tube boilers, ash-hopper linings and incinerator arches

TECHNICAL SPECIFICATION

(YR-CAST-50)

Product Type	(YR-CAST-50) WhytHeat C
Nature of Bond	Hydraulic
Installation	Vibration Casting
General Properties	
Max. Service Temperature	1500" C
Maximum Grain Size	5 mm
Water Required For Casting	10.5-11.5%
Chemical Analysis %	Typical Value
Al ₂ O ₃	50.50
Fe ₂ O ₃	1.20
CaO	4.50
Physical Properties	
Bulk density	g / cc
After drying at 110°C/24 hrs	2.17
CCS, kg/cm ² after drying at 110°C/24hrs	380
After heating at 1100°C/3 hrs	220
After heating at 1500°C/3 hrs	610
% retained on max. size	1.0
Thermal Properties	
Refractoriness, Orton / °C	+30/1665
PLC%	
After heating at 1100°C/3 hrs	-0.15
After heating at 1500nC/3 hrs	-1.5

Packaging	50 Kg Bags
Storage life	6 Months
Delivery state	Dry



INSPECTION REPORT

REF: ORDER NO.2002278

DATE: 15.04.2017

In pursuance of an order received from and on behalf of M/s. Yash Refractories, We attended the inspection of 54MT Silico Manganese and report as under.

A/C. CLIENT : YASH REFRACTORIES
402, UNNATI TOWER, CENTRAL SPINE,
VIDHYADHAR NAGAR,
JAIPUR, INDIA.

PURCHASE NO. : NS/w/17/002 Date 09.01.2017
(AS PER SUBMITTED COPY)

DESCRIPTION OF GOODS : SILICO MANAGESE

QUANTITY : 54.000 MTS.

PACKING : IN 1 MT BIG BAGS.

PLACE AND DATES OF ATTENDANCE : ON 16.03.2017 FOR SAMPLING, SIZE ANALYSIS, SAMPLE PREPARATION AND BIG BAGS SEALING AND ON 27.03.2017 CONTAINER STUFFING & SEALING SUPERVISION AT MANUFACTURERS WORK RAIPUR INDIA.

Upon arrival at the place of inspection, the cargo of Silico Manganese was offered in one lot of 54mt for our inspection in loose in bulk under covered shed at the inspection place.

SAMPLING AND SAMPLE PREPARATION: Manual sampling was carried out following the sampling scheme of ISO-4551-1987, ISO-3713-1987 & ISO-4552-1-1987 from the loose material during filling of 1MT big bags and requisite numbers of increments were collected for size and chemical analysis. Composite Samples were further processed to obtain quality samples for chemical analysis as per SOP No. SO/IN/MINE/TE-024/VER1.0/11.08.14.

A total of five sample packets were prepared for quality at Manufacturer plant premises on 16.03.2017 and sealed with our plastic strip seals and distributed. One sealed sample packet of seal no. 0065385 was handed over to manufacturer and one sample packet of seal no.0065387 was submitted to laboratory for analysis and remaining sample packets of seal no. 0065384, 0065388 & 0065390 were kept with us for future reference of two months until and unless definite instructions to the contrary received in the meantime.

The manual sampling method was agreed with the SGS Principal, as sampling by more reliable methods that provide probability samples was not possible. The Holder of this document is cautioned that collected MANUAL samples of this type do not satisfy the minimum requirements for probability sampling, and as such cannot be used to draw statistical inferences such as precision, standard error, or bias.

BIG BAGS SEALING:

All 54 big bags were sealed at mouth by individually numbered plastic seals bearing nos. 097106 to 097160.



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Report N°: 1704150033

Page N°: 2/ 2

REF: ORDER NO.2002278

DATE: 15.04.2017

SIZE ANALYSIS:

Gross composite sample was passed through the sieves of 80 mm and 150 mm size and the results ascertained are as under:

Size	Results obtained
- 80 MM	4.58 PCT (Four Decimal Five Eight)
+ 150 MM	3.16 PCT (Three Decimal One Six)
80 to 150 MM	92.26 (Ninety Two Decimal Two Six)

CHEMICAL ANALYSIS:

One sealed sample packet was submitted to our laboratory for chemical analysis and the results are as under:

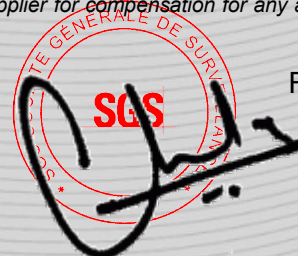
Test Parameters	Test Protocol	Results Obtained
Mn	IS:1559 – 1961 Reaff: 2012	66.19 PCT (Sixty Six Decimal One Nine)
Si	IS:1559 – 1961 Reaff: 2012	16.10 PCT (Sixteen Decimal One Zero)
C	ASTM E 1019-2011	2.070 PCT (Two Decimal Zero Seven Zero)
P	IS:1559 – 1961 Reaff: 2012	0.200 PCT (Zero Decimal Two Zero Zero)
S	ASTM E 1019-2011	0.026 PCT (Zero Decimal Zero Two Six)

CONTAINER STUFFING SUPERVISION: Prior to stuffing, the cleanliness of the containers were visually examined and found to be satisfactory. The material which was manually packed into big bags, placed inside containers and such 02 X 20' containers were stuffed in our presence.

Sl. No.	Container No.	No. of Bags	SGS Seal Number
1.	CRXU 1264080	27	0065361
2.	PONU 2045735	27	0065362
	TOTAL=	54Bags	

WEATHER CONDITION: Sunny/Fair.

"The findings of the stored Goods inspection contained herein (the "Findings") strictly relate to and cover examination of part or parts of the Goods safely accessible for inspection in accordance with the client's instructions. The Findings only relate to the time and place of inspection and do not constitute nor are intended to constitute evidence of the existence of part or all of the Goods prior to and after the time of inspection. SGS does not control the storage place of the Goods nor has any responsibility for the storage, custody and safety of the Goods. SGS does not guarantee nor make any representation about i) the accuracy and authenticity of the documents presented by the operator of the storage place (if any); ii) ownership of and title to the Goods; iii) quantity and quality of the Goods. SGS accepts no liability for the consequences of any action taken or not taken on the basis of this certificate/report." The above reflects our findings at time and place of inspection. This certificate does not relieve Sellers/Suppliers from their contractual responsibilities nor does prejudice buyer's right of claim towards Seller/Supplier for compensation for any apparent and/or hidden defects not detected during our random inspection or occurring thereafter.



For SGS India Pvt. Ltd.

SGS India Private Limited

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INSPECTION REPORT

REF: ORDER NO.2012232-01

DATE: 04.04.2018

DESCRIPTION OF GOODS : FERRO SILICO MANGANESE (SILICO MANGANESE)

QUANTITY (DECLARED) : 54 MTS

PACKING : 1 MT HDPE JUMBO BAGS

DOCUMENTARY CREDIT NO. : LC/02/046/10541 DATE OF ISSUE 180130

ORDERING CUSTOMER : ISHTIAQ STEEL INDUSTRIES
MEHAMOOD BOOTI BUND ROAD NEAR KAROL
GHATTI LAHORE PAKISTAN

BENEFICIARY CUSTOMER : YASH REFRACTORIES
402, UNNATI TOWERS, CENTRAL SPINE,
VIDHYADHAR NAGAR, JAIPUR (RAJ).
INDIA.

BILL OF LADING NO. : APLPL/KARACHI/1603/4590 DATED 16.03.2018
(SUBMITTED)

PORT OF LODING : NAGPUR, INDIA

PORT OF DISCHARGE : KARACHI, PAKISTAN

PLACE AND DATES OF ATTENDANCE: On 10.03.2018 for sampling, size analysis, sample preparation at manufacturer's works premises, Raipur (C. G.) & on 17.03.2018 container Stuffing, and Sealing Supervision at ICD , Nagpur

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As per instructions received from M/s. Yash Refractories., Jaipur, we have attended at the above place and dates for the purpose of quality and quantity inspection and our observation are as under:

Upon arrival at the place of inspection, the cargo of 108MT of Ferro Silico Manganese was offered for our inspection in packed condition in 1 MT Jumbo bags.



SGS India Private Limited

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Report N°: 1804040599

Page N°: 2/ 3

REF: ORDER NO.2012232-01

DATE: 04.04.2018

SAMPLING: Manual sampling was carried out for 108MT Ferro Silico Manganese following the sampling scheme of ISO-4551-1987, ISO-3713-1987 & ISO-4552-1-1987 from 1 m.t. bags and requisite numbers of increments were collected for size and chemical analysis. Samples were further processed to obtain composite sample for chemical analysis as per SOP No. SO/IN/MINE/TE-024/VER1.0/11.08.14.

A total of five sample packets were prepared for quality at manufacturer's plant premises on 10.03.2018 and sealed with our plastic strip seals. One sample packet was handed over to manufacturer of seal no. 0155669 and one sample packet of seal no. 0155733 was submitted to SGS laboratory for analysis and remaining sample packets of seal no. 0155670 & 0155731, 0155732 were kept with us as reference sample for the period of two months until and unless definite instructions to the contrary received in the meantime.

The manual sampling method was agreed with the SGS Principal, as sampling by more reliable methods that provide probability samples was not possible. The Holder of this document is cautioned that collected MANUAL samples of this type do not satisfy the minimum requirements for probability sampling, and as such cannot be used to draw statistical inferences such as precision, standard error, or bias.

SIZE ANALYSIS: The gross composite sample was passed through the sieves of 25mm and 150mm size and the results obtained of 108MT are allocated to this BL quantity of 54MT as requested by the beneficiary are as under:

Size	Results obtained
- 25 MM	4.23 PCT (Four Decimal Two Three)
+150 MM	2.16 PCT (Two Decimal One Six)
25 MM – 150 MM	93.61 PCT (Ninety Three Decimal Six One)

BIG BAGS SEALING : All 108 big bags were sealed with SGS Strip seals having individual seal no's from 178501 to 178600 and 178431 to 178438 at the inspection place.

CHEMICAL ANALYSIS: One sealed sample packet was submitted to our laboratory analysis as per IS 1559:1961 Reaff. 2012 and ASTM E-1019-2011 and the results obtained for 108MT are allocated to this BL quantity of 54MT as requested by the beneficiary as under:

Parameters	Test Protocol	Test Results
Mn	IS:1559 – 1961 Reaff: 2012	62.44 PCT (Sixtytwo Decimal Four Four)
Si	IS:1559 – 1961 Reaff: 2012	14.79 PCT (Fourteen Decimal Seven Nine)
C	ASTM E 1019-2011	2.260 PCT (Two Decimal Two Six Zero)
P	IS:1559 – 1961 Reaff: 2012	0.288 PCT (Zero Decimal Two Eight Eight)
S	ASTM E 1019-2011	0.021 PCT (Zero Decimal Zero Two One)



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Report N°: 1804040599

Page N°: 3/ 3

REF: ORDER NO.2012232-01

DATE: 04.04.2018

CONTAINER STUFFING SUPERVISION: Prior to stuffing, the cleanliness of the containers were visually examined and found to be satisfactory. The material which was manually packed into 1MT bags, placed inside containers and such 02 X 20' containers were stuffed in our presence. All containers were sealed with SGS plastic strip seals. Details as under: -

Sr. No.	Container No.	No. of Bags	SGS Seal No.
2	MCKU0207353	27	0155736
3	TRHU3101035	27	0155737
	TOTAL	54Bags	-----

WEATHER CONDITION: Sunny on all inspection attendance dates.

"The findings of the stored Goods inspection contained herein (the 'Findings') strictly relate to and cover examination of part or parts of the Goods safely accessible for inspection in accordance with the client's instructions. The Findings only relate to the time and place of inspection and do not constitute nor are intended to constitute evidence of the existence of part or all of the Goods prior to and after the time of inspection. SGS does not control the storage place of the Goods nor has any responsibility for the storage, custody and safety of the Goods. SGS does not guarantee nor make any representation about i) the accuracy and authenticity of the documents presented by the operator of the storage place (if any); ii) ownership of and title to the Goods; iii) quantity and quality of the Goods. SGS accepts no liability for the consequences of any action taken or not taken on the basis of this certificate/report."

The above reflects our findings at time and place of inspection. This certificate does not relieve Sellers/Suppliers from their contractual responsibilities nor does prejudice buyer's right of claim towards Seller/Supplier for compensation for any apparent and/or hidden defects not detected during our random inspection or occurring thereafter.



For SGS India Pvt Ltd.,



SGS India Private Limited

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INSPECTION REPORT

REF: ORDER NO.2012232-02

DATE: 04.04.2018

DESCRIPTION OF GOODS : FERRO SILICO MANGANESE (SILICO MANGANESE)

QUANTITY (DECLARED) : 54 MTS

PACKING : 1 MT HDPE JUMBO BAGS

DOCUMENTARY CREDIT NO. : LC/02/019/2215 DATE OF ISSUE 180122

ORDERING CUSTOMER : IQBAL INDUCTION FURNACE
SHAHEEN ABAD, G. T. ROAD, GUJRANWALA,
PAKISTAN

BENEFICIARY CUSTOMER : YASH REFRACTORIES
402, UNNATI TOWERS, CENTRAL SPINE,
VIDHYADHAR NAGAR, JAIPUR (RAJ).
INDIA.

BILL OF LADING NO. : APLPL/KARACHI/1603/4591 DATED 16.03.2018
(SUBMITTED)

PORT OF LODING : NAGPUR, INDIA

PORT OF DISCHARGE : KARACHI, PAKISTAN

PLACE AND DATES OF ATTENDANCE: On 10.03.2018 for sampling, size analysis, sample preparation at manufacturer's works premises, Raipur (C. G.) & on 17.03.2018 container Stuffing, and Sealing Supervision at ICD , Nagpur

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As per instructions received from M/s. Yash Refractories., Jaipur, we have attended at the above place and dates for the purpose of quality and quantity inspection and our observation are as under:

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Report N°: 180404059A

Page N°: 2/ 3

REF: ORDER NO.2012232-02

DATE: 04.04.2018

SAMPLING: Manual sampling was carried out for 108MT Ferro Silico Manganese following the sampling scheme of ISO-4551-1987, ISO-3713-1987 & ISO-4552-1-1987 from 1 m.t. bags and requisite numbers of increments were collected for size and chemical analysis. Samples were further processed to obtain composite sample for chemical analysis as per SOP No. SO/IN/MINE/TE-024/VER1.0/11.08.14.

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Report N°: 180404059A

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REF: ORDER NO. 2012232-02

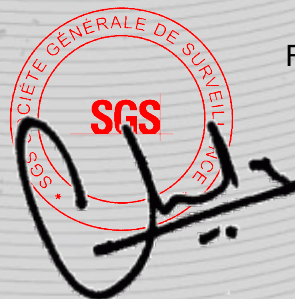
DATE: 04.04.2018

CONTAINER STUFFING SUPERVISION: Prior to stuffing, the cleanliness of the containers were visually examined and found to be satisfactory. The material which was manually packed into 1MT bags, placed inside containers and such 02 X 20' containers were stuffed in our presence. All containers were sealed with SGS plastic strip seals. Details as under: -

Sr. No.	Container No.	No. of Bags	SGS Seal No.
1	FSCU3686640	27	0155735
4	AMFU3027360	27	0155738
	TOTAL	54Bags	-----

WEATHER CONDITION: Sunny on all inspection attendance dates.

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For SGS India Pvt Ltd.,



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