1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier : Carbon Steel Electrodes for Gas Shielded Arc Welding

1.2 Trade name : SM-70G

1.3 Relevant identified uses of the substance or mixture and uses advised against :

1.3.1. Relevant identified uses: Welding

1.3.2. Uses advised against: No data available

1.4 Company Identification : HYUNDAI WELDING CO., LTD.

Il-song. 15~17fl, 507, teheran-ro, gangnam-gu, seoul, republic of Korea

Tel. +82-2-6230-6051~89, Fax. +82-2-522-2030, 525-7317

www.hyundaiwelding.com

2. HAZARDS IDENTIFICATION

2.1 Classification of the mixture:

The product is placed on the market in solid form.

2.1.1 *Classification in accordance with Directive 1999/45/EC* : Mixture is classified as **R43, R42, Xn; R68/20, Xn;R48/20, 21, 22**

2.1.2 *Classification in accordance with Regulation (EC) No 1272/2008* : Mixture is classified as **Skin Sens. 1. H317, Resp. Sens. 1 H334, STOT SE 2 H371, STOT RE 2 H373**

2.2 Label elements:

Labeling in accordance with Regulation (EC) No 1272/2008:

Pictograms:

GHS08 GHS07

Signal word: Danger

Hazard statements:

H317 May cause an allergic skin reaction.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H371 May cause damage to respiratory system.

H373 May cause damage to respiratory system through prolonged or repeated exposure.

Precautionary statements:

P260 Do not breathe fume.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P309+P311 If exposed or if you feel unwell: Call a POISON CENTER or doctor/physician.

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

P405 Store locked up.

P501 Dispose of contents and container in accordance with local and national regulations.

The mixture does not require a label according to Annex I.
Annex I, section 1.3 Derogations from labelling requirements for special cases:
In accordance with Article 23 the following derogation shall apply:
Metals in massive form, alloys, mixtures containing polymers and mixtures containing elastomers do not require a label according to this Annex, if they do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market, although classified as hazardous in accordance with the criteria of this Annex.

※ On the other hand, we want to offer classification and label of welding fume for workers.

2.3 Other hazards : No data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances: Not relevant.

3.2 Mixtures: The mixture contains these substances:

Substance name	CAS/EC No.	Conc.(%) Value(s)	Classification			
			67/548/EEC	CLP		
				Hazard Class and Category Code(s)	Hazard state-Ment	Pictogram / Signal word
Iron [2,3]	7439-89-6 / 231-096-4	95 to 99	Xn; R68/20/21/22 Xn; R68/20/21/22	STOT SE 2 STOT RE 2	H371 H373	GHS08 Warning
Manganese [2,3]	7439-96-5 / 231-105-1	1 to 2	Xn; R68/20/21/22	STOT RE 2	H373	GHS08 Warning

[2] Substance with workplace exposure limits.

[3] Substance is classified in terms of C&L Inventory.

Note C : Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers. In this case the supplier must state on the label whether the substance is a specific isomer or a mixture of isomers.

* For full text of H-statements and R-phrases: see SECTION 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures:

In case of respiratory exposure: Remove to fresh air and keep at rest. If breathing is difficult or has stopped, administer artificial respiration as necessary. Seek medical attention.

In case of skin contamination: Wash contaminated area thoroughly with soap and water. Remove and wash contaminated clothing. If a persistent rash or irritation occurs, seek medical attention.

In case of intrusion into eye: Immediately flush eyes with large amounts of running water for at least 15 minutes, lifting the upper and lower eyelids. Get medical attention.

In case of oral intake: Ingestion is considered unlikely due to product form. However, if swallowed do not induce vomiting. Seek medical attention. Advice to doctor: treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed: No data available.

4.3 Indication of any immediate medical attention and special treatment needed: No data available.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire (dry chemical, foam, water spray, carbon dioxide).

Unsuitable extinguishing media: No data available.

5.2 Special hazards arising from the substance or mixture: Fire may produce irritating or poisonous gases.

5.3 Advice for firefighters: In the event of a fire, wear self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel: Wear appropriate personal protective equipment as specified in Section 8. Ensure adequate ventilation.

For emergency responders: No data available.

6.2 Environmental precautions: Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

6.3 Methods and material for containment and cleaning up: Take up mechanically. Collect the material in labeled containers and dispose of according to local and regional authority requirements.

6.4 Reference to other sections: See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling: Welding may produce fumes, gases and dust hazardous to health. Avoid

breathing these fumes, gases and dust. Use adequate ventilation. Avoid contact with skin, eyes and clothing. Do not eat, drink and smoke in work areas. Wear appropriate personal protective equipment as specified in in Section 8.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool, dry and well-ventilated place. Keep away from incompatible materials. Keep away from heat and open flame.

7.3 Specific end use(s): No data available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters: Community workplace exposure limits were not established for substances contained in the mixture.

8.2. Exposure controls: Do not eat, drink and smoke. Immediately remove all contaminated clothing. Wash hands before breaks and at the end of work.

8.2.1 Appropriate engineering controls: Use local exhaust ventilation during all welding operations.

8.2.2 In Individual protection measures, such as personal protective equipment:

8.2.2.1 Eye/face protection: Always wear eye protection during welding operations, helmet and/or face shield with filter lens.

8.2.2.2 Skin protection:

Hand protection: Wear appropriate protective (welding) gloves during welding.

Other: Wear appropriate protective clothing and boots.

8.2.2.3 Respiratory protection: If ventilation is insufficient, use appropriate respirator or self-contained breathing apparatus.

8.2.2.4 Thermal hazards: No data available.

8.2.3 Environmental exposure controls: Do not allow to enter sewers, surface and ground water.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	solid (massive form)
Odour:	-
Odour threshold:	-
pH:	-
Melting point/freezing point :	-
Initial boiling point and boiling range:	-
Flash point:	-
Evaporation rate:	-
Flammability (solid, gas):	-
Upper/lower flammability or explosive limits:	-
Vapour pressure:	-
Vapour density:	-
Relative density:	-
Solubility(ies):	-
Partition coefficient: n-octanol/water:	-
Auto-ignition temperature:	-
Decomposition temperature:	-
Viscosity:	-
Explosive properties:	-
Oxidising properties:	-

9.2 Other information: No data available.

10. STABILITY AND REACTIVITY

10.1 Reactivity: No data available.

10.2 Chemical stability: The product is stable under normal conditions.

10.3 Possibility of hazardous reactions: No data available.

10.4 Conditions to avoid: No data available.

10.5 Incompatible materials: No data available.

10.6 Hazardous decomposition products: Metal oxide fumes and gases are produced during welding.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Substances: No data available.

Mixtures:

Acute toxicity: No data available.

Skin corrosion/irritation: No data available.

Serious eye damage/irritation: No data available.

Respiratory or skin sensitisation: No data available.

Germ cell mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

STOT-single exposure: No data available.

STOT-repeated exposure: No data available.

Aspiration hazard: No data available.

12. ECOLOGICAL INFORMATION

12.1 Toxicity: No data available.

12.2 Persistence and degradability: No data available.

12.3 Bioaccumulative potential: No data available.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: Dispose off in accordance with local and national regulations.

14. TRANSPORT INFORMATION

14.1 UN number: No data available.

14.2 UN proper shipping name: No data available.

14.3 Transport hazard class(es): No data available.

14.4 Packing group: No data available.

14.5 Environmental hazards: No data available.

14.6 Special precautions for user: No data available.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: No data available.

15. REGULATORY INFORMATION

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

The substances in the mixture are not subject to authorisation under Title VII or restrictions under Title VIII of Regulation (EC) No. 1907/2006.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

DIRECTIVE 1999/45/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations;

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative

provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

15.2 Chemical safety assessment: Chemical safety assessment is not available.

16. OTHER INFORMATION

List of relevant risk phrases and hazard statements: -

Instructions for the training: Product handling instruction shall be included into the educational system about the safety work (initial training, training at the workplace, repeated training) according to specific conditions at the workplace.

Recommended restrictions on use (i.e. non-statutory recommendations by supplier): Mixture should not be used for any other purpose than for which is appointed (point 1.2). Because of the fact that specific conditions of use of mixture are out of supplier's control, it is responsibility of the user to adjust the prescribed warnings to local laws and regulations. Safety information describes the product in terms of safety and it cannot be considered as technical information about product.

Sources of key data used to compile the Safety Data Sheet: SDS was elaborated according to requirements set in Annex II of Regulation (EC) No 1907/2006 of the European Parliament and of the Council. SDS was prepared using data from the producer.

Purpose of SDS: Purpose of this SDS is to provide relevant information for users of product to ensure proper handling and control of risks/hazards.

- End of document -