材　質　証　明　書
MATERIAL CERTIFICATE

納入先 MESSRS		Ryusen Hamono Co., Ltd.	需要家 CLIENT		
発行日 DATE OF ISSUE	:	April 26, 2022	寸法・形状 SIZE	:	5.2×100×1370
証明書番号 CERTIFICATE No.	:	1010040	溶解番号 HEAT No.	:	Y3125037 NC34D
ご注文番号 ORDER No.	:	2202-105	納入状態 CONDITION	:	Cold rolled, Annealed Hardness under HV350
材料鋼種名 MATERIAL	:	DPS Super Gold 2 with SUS410-1A	納入重量 MASS	:	92.0 kg

	鋼種 MATERIAL	化　学　成　分 CHEMICAL COMPOSITION										
合せ材 CORE	SPG2	成分 ELEMENTS	C	Cr	Mo	V	W	Co				
		成績※ RESULTS	1.33	14.80	2.77	2.04	−	−				
母材 BASE	SUS410-1A	成分 ELEMENTS	C	Cr	Mo	V	W	Co				
		成績※ RESULTS	0.11	11.65	−	−	−	−				

※記載の数値は成績値であり、規格値を示すものではございません。

※The values listed are typical results and do not represent specification values.

上記の注文品は弊社規定の規格または仕様に従って製造され、その条件を満足していることを証明します。

We hereby certify that the material described herein has been made in accordance with the requirement of our specified standard and/or specification with satisfactory results.

CLAD CORPORATION
TAKEFU SPECIAL STEEL CO., LTD.
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R. Horimoto

材　質　証　明　書
MATERIAL CERTIFICATE

納入先 MESSRS	Ryusen Hamono Co., Ltd.	需要家 CLIENT	
発行日 DATE OF ISSUE	: April 20, 2022	寸法・形状 SIZE	: 2.1×240×L
証明書番号 CERTIFICATE No.	: 1010039	溶解番号 HEAT No.	:
ご注文番号 ORDER No.	: 2202-38	納入状態 CONDITION	: Cold rolled, Annealed Hardness under HV350
材料鋼種名 MATERIAL	: Each Side 33 Layer Clad Stainless Steel with VG-10 Core	納入重量 MASS	: 208.5 kg

	鋼種 MATERIAL	化学成分 CHEMICAL COMPOSITION										
合せ材 CORE	VG10	成分 ELEMENTS	C	Cr	Mo	V	W	Co				
		成績※ RESULTS	0.99	14.61	0.83	0.26	—	1.39				
母材 BASE	SUS LAYERED (33Layer)	2種類のステンレスを交互に33層積層したクラッド材 A clad material formed with 33 layers of 2 different kinds of stainless steel alternating repeatedly.										

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R. Horimoto

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CLAD CORPORATION

Prepared on January 12, 2021

TAKEFU SPECIAL STEEL CO., LTD.

Safety Data Sheet [SDS]

1. Chemical product and company identification

Product name	:	Carbon tool steel, alloy tool steel, stainless steel, high speed steel, powder steel
Company name	:	Takefu Special Steel Co., LTD.
Address	:	21-2-1, Shiromaru-cho, Echizen City, Fukui, Japan 9150827
Division in charge	:	Technical department
Telephone number	:	+81-778-24-3666
Facsimile number	:	+81-778-24-3719
Website	:	http://www.e-tokko.com/contact.htm

*If you have any inquiries, please use the inquiry form on our website or directly contact our sales representatives.

2. Hazards identification

GHS classification and label elements

GHS classification

<Health hazard>

Hazard class	Category	Hazard statements
Skin corrosion/irritation	Category 2	Causes skin irritation
Serious eye damage/eye irritation	Category 2B	Causes eye irritation
Respiratory sensitization	Category 1	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin sensitization	Category 1	May cause an allergic skin reaction
Germ cell mutagenicity	Category 2	May cause genetic defects
Carcinogenicity	Category 2	Suspected of causing cancer
Reproductive toxicity	Category 1A	May cause genetic defects
Specific target organ toxicity (Single exposure)	Category 1 (Respiratory organ, kidneys, digestive organ, nervous system, osteoarticular)	Causes damage to organs (Respiratory organ, kidneys, digestive organ, nervous system, osteoarticular)
	Category 2 (Systemic toxicity, peripheral nervous system)	May cause damage to organs (Systemic toxicity, peripheral nervous system)
	Category 3 (Respiratory tract irritation)	May cause respiratory irritation
Specific target organ toxicity (Repeated exposure)	Category 1 (Respiratory organ, nervous system, hematopoietic system, kidneys, central nervous system, peripheral	Causes damage to organs through prolonged or repeated exposure (Respiratory organ, nervous system, hematopoietic system, kidneys, central nervous system, peripheral nervous system, cardiovascular system, immune

	nervous system, cardiovascular system, immune system, osteoarticular, liver, lungs)	system, osteoarticular, liver, lungs)

*Hazards not stated here are "Not classified", "Not applicable", or "Classification not possible".

<Environmental hazard>

Hazard class	Category	Hazard statements
Hazardous to the aquatic environment	Category 4	May cause long lasting harmful effects to aquatic life

*Hazards not stated here are "Not classified", "Not applicable", or "Classification not possible".

GHS label elements

<Pictograms>

<Signal words>

Danger

<Precautionary Statements>

Prevention

- Do not handle until all safety precautions have been read and understood. (P202)
- Wear protective gloves/protective clothing/eye protection/face protection. (P280)
- Use only outdoors or in a well-ventilated area. (P271)
- In case of inadequate ventilation wear respiratory protection. (P284)
- Do not breathe dust/fume/gas/mist/vapors/spray. (P260, P261)
- Contaminated work clothing should not be allowed out of the workplace. (P272)
- Do not eat, drink or smoke when using this product. (P270)
- Wash hands and eyes thoroughly after handling. (P264)
- Avoid release to the environment. (P273)

Response

- IF INHALED: Remove person to fresh air and keep comfortable for breathing. (P304+P340)
- If experiencing respiratory symptoms: Call a doctor. (P342+P311)
- Call a doctor and get medical advice/attention if you feel unwell. (P312, P314)
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. (P305+P351+P338)
- If eye irritation persists: Get medical advice/attention. (P337+P313)
- Take off contaminated clothing and wash it before reuse. (P362+P364)
- IF ON SKIN: Wash with plenty of water and soap. (P302+P352)

・If skin irritation or a rash occurs: Get medical advice/attention. (P332, P333+P313)

・If exposed or concerned: Get medical advice/attention. (P308+P313)

Storage

・Store locked up. (P405)

Disposal

・Dispose of contents/container in accordance with local/regional/national/international regulation (to be specified)] (P501)

3. Composition/Information on ingredients

Substance or Mixture: Mixtures (Alloy)

<Main ingredients>

Chemical name or generic name	Concentration (wt%)	CAS No.	PRTR No. (*1)	ISHL No. (*2)
Carbon [C]	0~2.5	7440-44-0	—	—
Manganese [Mn]	0~25	7439-96-5	1-412	550
Cupper [Cu]	0~5	7440-50-8	—	379
Nickel [Ni]	0~25	7440-02-0	1-308	418
Chromium [Cr]	0~30	7440-47-3	1-87	142
Molybdenum [Mo]	0~15	7439-98-7	1-453	603
Tungsten [W]	0~25	7440-33-7	—	337
Cobalt [Co]	0~25	7440-48-4	1-132	172
Lead [Pb]	0~0.5	7439-92-1	1-304	411
Bismuth [Bi]	0~0.5	7440-69-9	—	—
Tellurium [Te]	0~0.5	13494-80-9	2-50	376
Niobium [Nb]	0~1	7440-03-1	—	—
Tantalum [Ta]	0~1	7440-25-7	—	338
Tin [Sn]	0~1	7440-31-5	—	322
Titanium [Ti]	0~1	7440-32-6	—	—
Zirconium [Zr]	0~1	7440-67-7	—	—
Hafnium [Hf]	0~1	7440-58-6	—	438
Aluminum [Al]	0~10	7429-90-5	—	—
Vanadium [V]	0~20	7440-62-2	—	—
Boron [B]	0~1	7440-42-8	—	—
Iron [Fe]	Balance	7439-89-6	—	—

(*1) Law concerning Pollutant Release and Transfer Register
(*2) Industrial Safety and Health Law

(Note 1) The component values differ depending on the steel grade standard within the range shown in the above table.

(Note 2) In addition to the main components in the above table, trace elements such as silicon [Si], phosphorus [P], sulfur [S], and nitrogen [N] are included.

4. First-aid measure

See Chapter 2. "Hazards identification".

5. Fire-fighting measures

- ○ Extinguishing media: Steel materials are nonflammable (solid), ordinary fire extinguishers and/or water can be used to put out any fire.
- ○ Special hazards arising from the chemical: Grinding dusts and fine particles that are dry or deposited with grease and oil can spontaneously combust or be highly flammable. Manganese containing fines produce irritating or toxic fumes during a fire.
- ○ Specific fire extinguishing methods: Use powder fire extinguisher or dry sand for metal fires. Do not pour water directly on the fire due to the possibility of steam explosion. However, pouring water on an area that is not yet burning to lower the ambient temperature is acceptable.
- ○ Protective equipment and precautions for fire-fighters: Wear full protective clothing, air respirator, self-contained breathing apparatus, rubber boots, and fireproof clothing when extinguishing fires.

6. Accidental release measures

As product is solid, it is not leaked under general conditions. However, take measures below to prevent hazards by dust or fumes generated during steel material processing such as welding, weld cutting, cutting, and polishing:

(1) Personal precautions

Wear appropriate protective equipment to prevent inhalation of or eye contact with dust or fumes.

(2) Protective equipment and emergency procedure

Wear appropriate protective equipment such as respiratory protection, protective gloves/glasses/clothing, and safety shoes、If there are any physical problems with respiratory organs or eyes, get medical advice/attention immediately.

(3) Environmental precautions

Collect promptly any dust, etc. generated during cutting, griding, etc.

(4) Methods for containment and cleaning up

Collect generated dust in appropriate manner during steel materials processing such as cutting and grinding, and then prevent dispersion.

7. Handling and storage

(1) Technical measures

Wear appropriate protective equipment in case of generating dust or fumes during welding, weld cutting, or grinding. Moreover, be sure to provide local or general ventilation system. Periodic medical checkups are also recommended.

(2) Precautions for safe handling

Heavy weights call for great precautions in handling, against toppling, rolling, and package-collapsing. Cut-ends and cutting chips with burr may injure skin or eyes. Arcs from welding and cutting may cause burns. Fine particles and dusts generated by cutting and grinding may be flammable or explosive. When cutting bundling and packaging

hoops (bands), be careful about bouncing hoops and hoop-tips. Particularly with coils, be very careful about their leading ends which, when unbundled, might spring upward.

(3) Conditions for safe storage

Avoid contact with water leakage, acid, alkali, or substances containing them. Avoid environment with high temperature and high humidity. Use sheets or covers to prevent products from rain water infiltration, or pack products, if needed. When storing fine particles, dust, or scraps generated by cutting or grinding, cover them to prevent them from dispersing.

8. Exposure controls/personal protection

Wear dustproof masks and respiratory protection to protect against chips, dust, fine particles, fumes, etc. generated during cutting, grinding, welding, and other processing. Or, install local dust collectors and local exhaust systems to ensure that the allowable concentration of airborne dust does not exceed the standard values shown in Appendix 1.

- Respiratory protection: Recommend dust masks and respiratory protection against dust.
- Hand protection: Recommend wearing protective gloves against dust.
- Eye protection: Recommend wearing protective eyewear, goggles, and face shield against dust.
- Skin and body protection: Avoid direct contact with skin. To remove adhered dust, do not shake off clothing, rags, etc. Be sure to remove by washing or vacuuming with an appropriate filter. Change out of contaminated clothing. Using a local exhaust system is recommended.

9. Physical and chemical properties

(1) Appearance: Special steel products (solid under general conditions)

(2) Combusting point: Incombustible under general conditions.

However, fine particles generated by metal processing may lead to combustion or explosion.

(3) Melting point: 1370 °C and over

(4) Relative density: 7～9 g/cm3

(5) Solubility (water): Insoluble

10. Stability and reactivity

(1) Reactivity, chemical stability, and possibility of hazardous reaction

Stable under ordinary circumstances. Oxygen deficiency or harmful gasses may be caused by the contact with certain chemical substances such as water and acid.

(2) Conditions to avoid

Avoid acid.

(3) Incompatible materials

Acid.

(4) Hazardous decomposition products

Fumes generated during welding and weld cutting or the solution dissolved by acid solutions may contain hazardous metal compounds.

11. Toxicological information

See Chapter 2. "Hazards identification".

12. Ecological information

See Chapter 2. "Hazards identification".

13. Disposal information

Dispose of this product, scrap materials, cutting scraps, packaging materials, etc. in appropriate environmentally friendly manner in compliance with industrial waste disposal law and related ordinances and regulations established by prefectural government or municipality.

14. Transport information

Not classified as internationally controlled substances regarding transport.

When transporting the product, load it carefully to prevent it from tipping over, falling, being damaged, or collapsing.

15. Regulatory information

(1) Industrial Safety and Health Law

(2) Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register / PRTR Law)

16. Other information

<References>

(1) GHS Labeling and SDS provision system under PRTR Low and ISHL (Ministry of Economy, 2012)

(2) The website of the National Institute of Technology and Evaluation (NITE)

(3) Office safety website (Ministry of Health, Labour and Welfare)

This safety data sheet has been drawn up in accordance with information which is available at Takefu Special Steel Co., LTD. at the time of preparation.

This safety data sheet is intended to furnish reference information for securing safe handling of our products and is not intended for assuring the safety of our products.

Referring to this data sheet, users should utilize their own responsibility in taking appropriate safety measures depending on the actual state of handling.

End of Safety Data Sheet