SAFETY DATA SHEET

In accordance with ISO 11014: 2009

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Product name	TW898

Manufacture/supplier

Manufacture/supplier	MAX Co., Ltd.
Department in Charge	Environmental Quality Group, Environment & Quality Assurance Department
Address	1848 Kawai, Tamamura-machi, Sawa-gun, Gunma 370-1117, Japan
Telephone number	+81-270-65-1381
Fax number	+81-270-65-1043
e-mail address	
Emergency telephone number	+81-270-65-1381

Recommended use and restriction on use

General industrial uses

Section 2: HAZARDS IDENTIFICATION

Important hazards

GHS classification

Physical Hazards

Not classified

Health Hazards

Reproductive toxicity: Category 1

Environmental Hazards

Not classified

Label Elements

Pictogram

Signal word	**Danger**
Hazard Statements	May damage fertility or the unborn child
Precautionary Statements	
[Prevention]	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face

	protection.
[Emergency response]	IF exposed or concerned: Get medical advice/attention.
[Storage]	Store locked up.
[Disposal]	Dispose of contents/ container in accordance with related laws and local/ regional regulations.

Other hazards

No information

Important symptoms and an outline of an anticipated emergency

May damage fertility or the unborn child

Section 3: COMPOSITION/ INFORMATION ON INGREDIENTS

Substance/Mixture

Mixture

Compositions

Chemical name/ Generic name	CAS number	Concentration (wt %)
Iron	7439-89-6	≥98.855
Manganese	7439-96-5	0.60-0.90
Carbon	7440-44-0	0.12-0.18
Phosphorus	7723-14-0	≤0.03
Sulfur	7704-34-9	≤0.035

Section 4: FIRST-AID MEASURES

First aid procedures

IF INHALED	If symptoms continue, call a doctor/physician.
IF ON SKIN	Rinse with plenty of water. If symptoms continue, call a doctor/physician.
IF IN EYES	Rinse with plenty of water. If symptoms continue, call a doctor/physician.
IF SWALLOWED	Rinse mouth. If symptoms continue, call a doctor/physician.

Anticipated acute effects, anticipated delayed effects and most important symptoms/effects

No information

Protection of first-aiders

No information

Note to an attending physician

No information

Section 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

This product is incombustible solid. In case of fire in surrounding area, use fire extinguisher or water.

Use appropriate extinguishing media depending on fire.

Unsuitable extinguishing media

Applying direct water may be dangerous because fire may expand to surroundings.

Specific hazards arising from the chemical

Take action from windward.
Keep out except responsible personnel.
Move container to a safe area if it can be done without risk.

Protective equipment and precautions for firefighters

Fire fighters should wear appropriate protective equipment and fireproof clothing.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions

May not leak out because this product is solid.

Environmental precautions

May not leak out because this product is solid.

Methods and materials for containment and cleaning up

Sweep up scattered materials so as not to cause dust then collect them into an empty container.
Do not eat or drink near handling and storage locations.
Prevent to flowing into drains, sewers, basements or closed areas.

Secondary disaster prevention measures

May not leak out because this product is solid.

Section 7: HANDLING AND STORAGE

Handling

Technical measures	Not needed under normal handling condition.
Precautions such as local/total ventilation	In case of mist/dust generation, use local ventilation.
Precautions for safe handling	Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid the generation of dust.
Prevention of contact	Incompatible materials Not needed under normal handling condition.

Storage

Technical measures	Not needed under normal handling condition.
Incompatible materials and mixtures	Oxidizing agents
Conditions for safe storage	Store in a place where children cannot get it.
Packing material	No information

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Permissible concentration

Occupational Exposure Limits

ACGIH TLV-TWA (2016)	0.02mg/m^3 (Manganese, elemental and inorganic compounds, as Mn) (Respirable particulate matter)

Engineering controls

In a work place where dusts generate, ensure to use sealed instrument or local ventilation.

Personal protective equipment

Respiratory protection	In case of dust generation, wear appropriate protective mask or air aspirator as required.
Hand protection	Wear protective gloves as required.
Eye protection	Wear safety glasses or goggles if in eyes.
Skin and body protection	Wear protective clothing and apron if necessary.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, form and colour)	Solid, silver-gray wire rod
Odour	Odorless
Odour threshold	No information
pH	No information
Melting point/ freezing point	No information
Boiling point, initial boiling point and boiling range	No information
Flashpoint	No information
Evaporation rate	No information
Flammability	No information
Upper/lower explosive limits	No information
Vapour pressure	No information
Vapour density	No information
Specific gravity	ca. 7.8
Solubility	No information
n-octanol/water partition coefficient	No information
Auto-ignition temperature	No information
Decomposition temperature	No information
Viscosity	No information
Other information	No information

Section 10: STABILITY AND REACTIVITY

Chemical stability	Stable under normal handling condition.
Hazardous reactions	No hazardous reaction expected under normal handling.
Conditions to avoid	Incompatible materials
Incompatible materials	Oxidizing agents

Hazardous decomposition products	No information

Section 11: TOXICOLOGICAL INFORMATION

Toxicological information for product

No information

Toxicological information for ingredients

Manganese

Acute toxicity (oral):	Rat LD_{50} = 9,000 mg/kg
Eye damage/irritation:	Report on rabbit eye irritation tests: "mild irritation."
Reproductive toxicity:	Embryo lethality and fetal malformation (exencephaly) observed in mouse teratogenicity studies using intraperitoneal injection (though no data are available on parental toxicity).
Specific target organ toxicity (single exposure):	Acute exposure to manganese dusts (in particular, MnO_2 and Mn_3O_4) induces pulmonary inflammation which progresses to pulmonary impairment with time. Pulmonary effects increase the infectiousness of bronchitis etc., resulting in manganese pneumonia.
Specific target organ toxicity (repeated exposure):	The most commonly occurring manganese-bearing minerals include manganese dioxide, manganese carbonate, manganese silicate and manganese trioxide. In general, the available data indicate that exposure to excess manganese for 14 days or less (acute duration) or up to a year (intermediate duration) has an effect on the respiratory system and the nervous system, with little to no effect on other organ systems.

Section 12: ECOLOGICAL INFORMATION

Ecological information for product

Ecotoxicity	No information
Persistence and degradability	No information
Bioaccumulative potential	No information
Mobility in soil	No information
Hazardous to the ozone layer	Not applicable

Ecological information for ingredients

Manganese

Ecotoxicity (acute)	No information
Ecotoxicity (chronic)	$L(E)C_{50} \leq$ 100 mg/L
Persistence and degradability	No information
Bioaccumulative potential	No information
Mobility in soil	No information
Hazardous to the ozone layer	Not applicable

Section 13: DISPOSAL CONSIDERATIONS

Remaining product

Dispose of waste in accordance with applicable local, regional and international regulations and standards.
When disposing, consult to a certificated waste trader or local offices if they deal with the waste.

Contaminated containers and packaging

Used container should be recycled after cleaning or dispose of in compliance with related laws and local regulations.
Contents should be removed completely when dispose of empty containers.

Section 14: TRANSPORT INFORMATION

International regulation

UN number	Not applicable
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Subsidiary risk	Not applicable
Packing group	Not applicable
Marine pollutant	Not applicable
IBC Code	Not applicable

When transporting, confirm no damage to containers. Avoid handling violently or leaking wet. Load to prevent fall or falling down containers and take preventive measures of collapse.

Section 15: REGULATORY INFORMATION

US Federal regulation

TSCA inventory: Registered

EU regulation

The product and its ingredients are not regulated by specific provisions related to protection of human health or the environment at EU level, e.g. not considered as SVHCs or POPs.
(EC) 1272/2008 (Annex VI, Table 3.1, Table 3.2): Phosphorus and sulphur listed.

Section 16: OTHER INFORMATION

Reference

Information of MAX Co., Ltd.
NITE GHS classification (2016)
ACGIH, American Conference of Governmental Industrial Hygienists (2016) TLVs and BEIs.

[Disclaimer]

This SDS has been prepared on the basis of laws, regulations and information available at tRathis time. It is user's responsibility to modify or update any contents in this SDS regarding information on hazardous properties and/or instruction for safe handling of the product when they become available. Precautionary measures in this SDS are only applicable for normal handling conditions and it is necessary to take appropriate additional measures to ensure safe handling which depend on your specific use conditions or situations.