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Material Safety Data Sheet

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

1.1 Product identifiers

Product name 2-Methylcyclopentadienylmanganese tricarbonyl
Product number E060157
Brand 3ASenrise
CAS number 12108-13-3

1.2 Details of the supplier of the safety data sheet

Company: Anhui Senrise Technology Co., Ltd.
Address: No.88 Weisan Road, High-Tech Industrial Development Zone, Anqing, Anhui
Post code: 246003
Tel: 400-005-6266
Fax: 0556-5555368
Email: service@3asenrise.com

1.3 Emergency telephone

Emergency telephone: 0556-5500208

1.4 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: For R&D use only. Not for pharmaceutical, household or other uses.

2 HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 1), H330 Acute toxicity, Dermal (Category 2), H310
Skin irritation (Category 2), H315
Specific target organ toxicity – repeated exposure, Inhalation (Category 1), Lungs, H372
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

2.2 GHS label elements, including precautionary statements

Pictogram



Signal word: Danger

Hazard statement(s)

H301 Toxic if swallowed.
H310+H330 Fatal in contact with skin or if inhaled.
H315 Causes skin irritation.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

Prevention

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P262 Do not get in eyes, on skin, or on clothing.

P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P273 Avoid release to the environment.

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

P284 Wear respiratory protection.

Response

P301+P310+P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

P302+P352+P310 IF ON SKIN: Wash with plenty of water. Immediately call a POISON CENTER/ doctor.

P304+P340+P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P314 Get medical advice/attention if you feel unwell.

P332+P313 IF SKIN irritation occurs: Get medical advice/attention.

P361+P364 Take off immediately all contaminated clothing and wash it before reuse.

P391 Collect spillage. Hazardous to the aquatic environment

Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Physical and chemical hazards

No data available

2.4 Health hazards

H301 Toxic if swallowed.

H310 Fatal in contact with skin.

H315 Causes skin irritation.

H330 Fatal if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

2.5 Environmental hazards Code

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

2.6 Other hazards

No data available

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Substance

3.1 Substance

Name	2-Methylcyclopentadienylmanganese tricarbonyl
Formula	C ₉ H ₇ MnO ₃
Molecular Weight	218.09
CAS	12108-13-3
Concentration	97%

4 FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

5 FIREFIGHTING MEASURES

5.1 Extinguishing media

No data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides Manganese/manganese oxides Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating.

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

6 ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

6.4 Reference to other section

For disposal see section 13.

7 HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Long term storage: RT

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

No data available.

8.2 Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product.

Body protection

Flame retardant antistatic protective clothing.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Control of environmental exposure

Do not let product enter drains. Risk of explosion.

9 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Yellow to dark orange to brown liquid
b) Odor	No data available
c) pH	No data available
d) Melting point/freezing point	-1 ° C
e) Initial boiling point and boiling range	232 - 233 ° C
f) Upper/lower flammability or explosive limits	No data available
g) Flash point	96 ° C - closed cup
h) Evaporation rate	No data available
i) Vapor pressure	0.07 hPa at 20 ° C
j) Vapor density	No data available
k) Density	1.38 g/cm ³ at 25 ° C
l) Water solubility	ca. 0.01 g/l at 22 ° C - slightly soluble
m) Partition coefficient: n-octanol/water	No data available
n) Autoignition temperature	No data available
o) Decomposition temperature	No data available
p) Flammability	No data available

10 STABILITY AND REACTIVITY

10.1 Chemical stability

No data available.

10.2 Conditions to avoid

No data available.

10.3 Incompatible materials

Strong oxidizing agents

10.4 Hazardous decomposition products

In the event of fire: see section 5.

11 TOXICOLOGICAL INFORMATION

11.1 Acute toxicity

LD50 Oral

- Rat - male and female - 58 mg/kg

LC50 Inhalation

- Rat - male - 4 h - 0.07 mg/l - vapor

LD50 Dermal

- Rabbit - male and female - 196.7 mg/kg

11.2 Skin corrosion/irritation

Skin - Rabbit Result: Irritating to skin. - 24 h

11.3 Serious eye damage/eye irritation

Eyes - Rabbit Result: No eye irritation

11.4 Respiratory or skin sensitization

Maximization Test - Guinea pig Result: Does not cause skin sensitization.

11.5 Germ cell mutagenicity

Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative Species: Mouse Method: OECD Test Guideline 478

Result: negative

11.6 Carcinogenicity

No data available

11.7 Reproductive toxicity

No data available

11.8 Specific target organ toxicity - single exposure

No data available

11.9 Specific target organ toxicity - repeated exposure

Inhalation - Causes damage to organs through prolonged or repeated exposure. - Lungs

11.10 Aspiration hazard

no data available.

11.11 Additional Information

RTECS: OP1450000 Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

12 ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish:

semi-static test LC50 - Cyprinus carpio (Carp) - 0.21 mg/l - 96 h

Toxicity to daphnia and other aquatic:

static test EC50 - Daphnia magna (Water flea) - 0.83 mg/l - 48 h

Toxicity to algae:

No data available

Toxicity to bacteria:

No data available

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 56 d Result: 4 % - Not biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Other adverse effects

No data available

13 DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Observe all federal, state and local regulations when disposing of the substance.

Contaminated packaging

Disposal must be made according to official regulations.

14 TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3281 IMDG: 3281 IATA: 3281

14.2 UN proper shipping name

ADR/RID: METALCARBONYLS, LIQUID, N. O. S. (2-Methylcyclopentadienylmanganese tricarbonyl)

IMDG: METALCARBONYLS, LIQUID, N. O. S. (2-Methylcyclopentadienylmanganese tricarbonyl)

IATA-DGR: METALCARBONYLS, LIQUID, N. O. S. (2-Methylcyclopentadienylmanganese tricarbonyl)

14.3 Transport hazard class(es)

ADR/RID: 6.1 IMDG: 6.1 IATA: 6.1

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

No data available

15. REGULATORY INFORMATION

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

Applicable regulations

Please pay attention to waste disposal and meet the requirements of local regulations.

16. OTHER INFORMATION

Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

IATA: International Air Transport Association

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

CAS: Chemical Abstracts Service (division of the American Chemical Society)

Further information

The above safety technical information is for reference only, because many physical and chemical properties are not entirely clear. Please consult information carefully before use and use after confirmation.

Anhui Senrise Technology Co., Ltd. shall not be held liable for any damage resulting from handling or from contact with the above product. More terms of use, see invoice

information for details.

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