

Material Safety Data Sheet

Sodium Manganese Iron Phosphate (NMFP) Powder

Report No.: VIH240927011-1
Version: 2.1
Preparation Date: 27/09/2024
Revision Date: 27/09/2024

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product Name	Sodium Manganese Iron Phosphate (NMFP)
Product No.	112526150800PD
Formula	$\text{NaMn}_{(x)}\text{Fe}_{(1-x)}\text{PO}_4$
CAS No.	/
Synonyms	NMFP, Sodium iron manganese phosphate, Sodium ferromanganese phosphate

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

Identified uses	Laboratory chemicals, Scientific research
Uses advised against	Consulting manufacturers

1.3 Details of the supplier of the safety data sheet

Company Name	VI HALBLEITERMATERIAL GmbH
Street	Bergener Straße 14.,
City	Hannover
State	Niedersachsen
Zip Code	30625
Country	Germany
Tel	0049 1626484175
Email	info@vimaterial.de
Website	https://vimaterial.de/

1.4 Emergency telephone number

Emergency Phone #	0049 1626484175
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2. Hazards Identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Physical hazards

Not Classified

Health hazards

STOT - single exposure	Category 3 (H335)
STOT - repeated exposure	Category 2 (H373)

Environmental hazards

Not Classified

Full text of Hazard Statements: see section 16

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal Word	Warning
Pictograms	

Hazard Statements

H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention	
P260	Do not breathe dust or vapours
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response	
P304 + P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P314	Get medical advice/attention if you feel unwell.
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 Other hazards

The substance is not PBT / vPvB.

The substance is not identified as having endocrine disrupting properties.

3. Composition/information on ingredients

3.1 Substances

Chemical Family	Phosphate
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Component	CAS No.	EC No.	Concentration
Sodium Manganese Iron Phosphate (NMFP)	/	/	≥99%

4. First aid measures

4.1 Description of first aid measures

General Treatment	If symptoms persist, seek medical attention. Show this Safety Data Sheet to the medical personnel.
Inhalation	Remove from exposure, taking care to avoid inhaling vapours. Keep warm rest. Obtain medical attention if symptoms appear.
Skin	Take off immediately all contaminated clothing. Rinse skin with water/ shower. If skin irritation occurs, seek medical attention.
Eyes	Rinse with pure water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek medical attention.
Ingestion	Rinse mouth with water (only if the person is conscious). Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

May cause respiratory irritation. May cause damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

1	If skin irritation or rash occurs, get medical advice/attention.
2	Be aware that symptoms may be delayed.

5. Firefighting Measures

5.1 Extinguishing Media

Suitable extinguishing media	Water, foam, carbon dioxide (CO ₂), dry powder.
Unsuitable extinguishing media	N/A

5.2 Special hazards arising from the substance or mixture

1	Sodium oxides
2	Manganese/manganese oxides
3	Iron oxides
4	Oxides of phosphorus
5	No specific fire or explosion hazard.

5.3 Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
2	Fight fire from a safe distance and with adequate protection.
3	Do not allow firefighting water to enter drains or water courses.
4	Collect contaminated firefighting water separately.

6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.
For emergency responders	Wear an appropriate NIOSH/MSHA approved respirator if dust is generated.

6.2 Environmental Precautions

1	Avoid release to the environment.
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6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill	Covering of drains, Take up mechanically.
Advice on how to clean up	Sweep up and shovel. Take care not to raise dust.

a spill	
Other information relating to spills and releases	Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

7. Handling and Storage

7.1 Precautions for safe handling

Recommendations	Provide appropriate exhaust ventilation at places where dust is formed. Do not get in eyes, on skin, or on clothing.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

7.2 Conditions for safe storage, including any incompatibilities

Ventilation requirements	Keep containers tightly closed in a dry, cool and well-ventilated place.
Flammability hazards	Avoid dust formation.
Incompatible materials	See Section 10.5

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. Exposure Controls/Personal Protection

8.1 Control parameters

Occupational exposure limits

Not available.

Additional exposure limits under the conditions of use

Not available.

DNEL/DMEL Values

Not available.

PNEC-Values

Not available.

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) (European standard - EN166) and face protection.

Skin protection

-Hand Protection

Protective gloves (The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.)

-Other protection measures

Wear appropriate protective gloves and clothing to prevent skin exposure. Wash hands thoroughly after handling.

Respiratory Protection

No protective equipment is needed under normal use conditions.

Large scale/emergency use	Where protection from nuisance levels of dusts are desired, use type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as CEN (EU).
Small scale/Laboratory use	Maintain adequate ventilation

Thermal hazards

Wear suitable protective clothing to prevent heat.

Environmental exposure controls

Avoid discharge into the environment. According to local regulations, Federal and official regulations.

9. Physical and Chemical Characteristics

9.1 Information on basic physical and chemical properties

Physical State	Powder
Colour	Black
Odor	Weak odor
Melting Point/Range	Not determined

Boiling Point/Range	Not applicable
Flammability (liquid)	Not applicable
Flammability (solid, gas)	No data available
Explosion limits	No data available
Flash Point	Not applicable
Autoignition Temperature	Not determined
Decomposition Temperature	No data available
pH	9
Viscosity	Not applicable
Water Solubility	Insoluble
Solubility in other solvents	No data available
Partition Coefficient (n-octanol/water)	No data available
Vapor Pressure	No data available
Density / Specific Gravity	3.32 g/cm ³
Vapor Density	Not applicable
Particle characteristics	No data available

9.2 Other information

Molecular formula	NaMn _x Fe _(1-x) PO ₄
Molecular weight	No data available
Evaporation Rate	Rate Not applicable - Solid

10. Stability and reactivity

10.1 Reactivity

The substance is stable under normal storage and handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous Polymerization: No data available.

Hazardous Reactions: No data available.

10.4 Conditions to avoid

Incompatible materials.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Other decomposition products: No data available.

In the event of fire: see section 5

11. Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity	Oral:	No data available
	Dermal:	No data available
	Inhalation:	No data available
Skin corrosion/irritation	No data available.	
Serious eye damage/irritation	No data available.	
Respiratory or skin sensitization	Respiratory	No data available.
	Skin	No data available.
Germ cell mutagenicity	No data available.	
Carcinogenicity	No data available.	
Reproductive toxicity	No data available.	
STOT - single exposure	May cause respiratory irritation.	
STOT - repeated exposure	May cause damage to organs through prolonged or repeated exposure.	
Aspiration hazard	Not applicable. Solid	

11.2 Information on other hazards

Endocrine Disrupting Properties: Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

12. Ecological Information

12.1 Toxicity

Ecotoxicity effects	No data available.
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12.2 Persistence and degradability

Persistence	No data available.
Degradability	No data available.

12.3 Bioaccumulative potential

Bioaccumulative potential	No data available.
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12.4 Mobility in soil

Mobility in soil	No data available.
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12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	In accordance with Annex XIII of the REACH Regulation, inorganic substances do not require assessment.
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12.6 Endocrine disrupting properties

Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors.
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12.7 Other adverse effects

Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

13. Disposal Considerations

13.1 Waste treatment methods

Dispose of in accordance with all applicable local and national regulations. Use recovery/recycling where feasible, otherwise incineration is the recommended method of disposal. Empty containers may contain hazardous residues. Do not cut, puncture or weld on or near to the container. Labels should not be removed from containers until they have been cleaned. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

14. Transport information

IMDG

14.1. UN number	Not regulated
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable.
14.4. Packaging group	Not applicable.

ADR/RID/ADN

14.1. UN number	Not regulated
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable.

14.4. Packaging group	Not applicable.
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ICAO-IATA/DGR

14.1. UN number	Not regulated
14.2. UN Proper shipping name	Not classified as hazardous for transport.
14.3. Transport hazard class(es)	Not applicable.
14.4. Packaging group	Not applicable.

14.5. Environmental hazards	No hazards identified.
14.6. Special precautions for user	No special precautions required.
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods.

15. Regulatory information

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

Relevant information regarding authorization:	Not applicable
Relevant information regarding restriction:	Not applicable
Other EU regulations:	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
Other National regulations:	Not applicable

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

16. Other information

Revision information

Preparation date	27/09/2024
Revision date	27/09/2024
Revision reason	Creation.

Abbreviations and acronyms

CAS	Chemical Abstracts Service
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
IATA	International Air Transportation Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
TWA	Time Weighted Average
STOT	Specific target organ toxicity
PBT	Persistent, Bioaccumulative, Toxic
vPvB	Very Persistent, very Bioaccumulative
WEL	Workplace exposure limit

References

- [1] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- [2] ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- [3] eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- [4] Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- [5] HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- [6] IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- [7] IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- [8] ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>

List of relevant phrases (code and full text as stated in chapter 2 and 3)

H335	May cause respiratory irritation
H373	May cause damage to organs through prolonged or repeated exposure.

Disclaimer

The information of this safety data sheet is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products. For further information please contact info@vimaterial.de.