



Safire® 400

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
COMMISSION REGULATION (EU) No. 2020/878

Issue Date 14/May/2025

Print Date 03/Oct/2025

Revision Number 1.7.2

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name:	Safire® 400
Chemical Name	Melamine poly(zinc phosphate)
Pure substance/mixture	Substance

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

Recommended Use	Smoke suppressant. Flame retardant. No consumer use allowed.
Uses advised against	None known.

1.3. Details of the supplier of the safety data sheet

Manufacturer	J.M. Huber Corporation 3100 Cumberland Boulevard, Suite 600 Atlanta, GA 30339 USA Tel: +1 678 247-7300
Internet	www.huberadvancedmaterials.com
Contact E-Mail	www.huberadvancedmaterials.com/contact

1.4. Emergency telephone number	CHEMTREC: +1 800 424 9300 or International 1+703-527-3887
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Poison control center phone number	National Anti-Poison Center UK: +44 844 892 0111 (National Poisons Information Service)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

(CLP) Regulation (EC 1272/2008) Hazardous to the aquatic environment - Chronic, category 2

Hazards identification

Physical Hazard	Not classified.
Health Hazards	Not classified.
Environmental Hazard	Aquatic Chronic Category 2: H411

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2.2. Label elements

Symbols/Pictograms

**Signal Word**

None

Hazard Statements

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements**Prevention**

P273 - Avoid release to the environment

Response

P391 - Collect spillage

Storage

P402 - Store in a dry place

Disposal

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Additional Information:

None.

2.3. Other hazards

This substance does not meet the criteria for classification as PBT or vPvB
Avoid inhalation of the product

Other

According to the U.S. Environmental Protection Agency this substance presents a concern for hazard to the aquatic environment and reproductive toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance

Chemical Name	CAS NUMBER:	EC No	(CLP) Regulation (EC 1272/2008)	Weight-%
Melamine poly(zinc phosphate)	1271172-98-5	690-512-6	Aquatic Chronic 2 H411 - Toxic to aquatic life with long lasting effects	95.0 -100.0

SECTION 4: First aid measures

4.1. Description of first aid measures

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General Advice	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
Eye Contact	In case of eye contact, remove contact lens and rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Skin Contact	IF ON SKIN: Wash with plenty of soap and water. Remove contaminated clothing and shoes.
Inhalation	Do not breathe dust. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Ingestion	Rinse mouth thoroughly with water. If conscious, drink plenty of water.
Aspiration hazard	Not applicable. Solid.
Notes to Physician	Treat symptomatically.
4.2. Most important symptoms and effects, both acute and delayed	May cause skin, eye, and respiratory tract irritation.
4.3. Indication of any immediate medical attention and special treatment needed	Treatment should be symptomatic and supportive.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

Water spray (fog). Foam. Dry chemical. Carbon dioxide (CO₂).

Unsuitable Extinguishing Media

None known.

5.2. Special hazards arising from the substance or mixture

None known.

5.3. Advice for firefighters

Special protective equipment for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing.

Fire-fighting measures

In case of fire and/or explosion do not breathe fumes.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protection recommended in Section 8.
Avoid dust formation. Keep unauthorized personnel away.

For non-emergency personnel Keep unauthorized personnel away.

For emergency responders Keep unauthorized personnel away. Use personal protection recommended in Section 8.

6.2. Environmental precautions Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up Large Spill: Do not dry sweep dust. Wet dust with water before sweeping or use a vacuum to collect dust Small Spill: Vacuum or sweep material and place in a disposal container

6.4. Reference to other sections Section 8: Exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Minimize dust generation and accumulation
Provide local exhaust ventilation
Handle in accordance with good industrial hygiene and safety practice
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
See section 8 for more information

7.2. Conditions for safe storage, including any incompatibilities Store away from incompatible materials
Keep container tightly closed and dry

7.3. Specific end use(s) No information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Recommended monitoring procedures

Refer also to national guidance documents for information on currently recommended monitoring procedures

Biological Limit Values

No information available

DNEL (Derived No Effect Level) No data available

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PNEC (Predicted No Effect Concentration) No information available

8.2. Exposure controls

Engineering Measures Ensure adequate ventilation, especially in confined areas
Provide a good standard of controlled ventilation (10 to 15 air changes per hour)

Personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).

Skin and Body Protection Wear suitable protective clothing.

Hand Protection For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

NIOSH P95

P1

Thermal hazards None known.

Hygiene Measures Follow general hygiene considerations recognized as common good workplace practices
The worker should wash daily at the end of each work shift, and prior to eating, drinking, smoking, etc

Environmental Exposure Controls Dispose of in accordance with local regulations
Do not empty into drains or water courses

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:

Physical State

Solid Powder

Color

White to light yellow

Odor

None

pH:

5.0 - 5.5 , < / =0.3% suspension - Water

Melting point / Freezing point

> 650 °C

Initial boiling point and boiling range

Not applicable Solid

Freezing Point

Not applicable

Flash Point

Not applicable Solid

Flammability

Not readily flammable ----- Solid - (EU A10)

Upper flammability limit:

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Lower flammability limit:	--
Vapor Pressure	No data available
Relative Vapor Density	Not applicable Solid
Density	No data available
Bulk Density	0.51 +/- 0.3 g/ml
Relative Density	2.4 +/- 0.3 g/cm ³ (20 °C)
Water Solubility	0.1 to 100 mg/L Slightly soluble
Solubility in other solvents	No data available
Partition coefficient	No information available (25 °C)
Autoignition Temperature	> 1000 °C
Decomposition Temperature	>325 °C
Viscosity	Not applicable. Solid.
Kinematic viscosity	Not applicable
Explosive Properties	Not Explosible based on 1 m ³ Chamber, ASTM E1226
Oxidizing Properties	Not oxidizing
Particle Characteristics	D50 = 2.5 – 4.0 microns (80% below 10 microns)
VOC Content (%)	Not applicable

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

Not applicable

9.2.2. Other safety characteristics

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	Stable under normal conditions
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	No specific hazard known
10.4. Conditions to avoid	Incompatible materials Strong oxidizing agents alkali
10.5. Incompatible materials	Strong acids
10.6. Hazardous decomposition products	None known

SECTION 11: Toxicological information

General Information	Users are advised to consider national Occupational Exposure Limits or other equivalent values.
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11.1. Information on toxicological effects

Acute Toxicity	Based on available data, the classification criteria are not met.
Respiratory Sensitization	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.
Skin Corrosion/Irritation	Based on available data, the classification criteria are not met.
Skin Sensitization	Based on available data, the classification criteria are not met.
Mutagenicity	Based on available data, the classification criteria are not met.
Reproductive Toxicity	According to the U.S. Environmental Protection Agency this substance presents a concern for hazard to the aquatic environment and reproductive toxicity.
Carcinogenicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity - Single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - Repeated exposure	Based on available data, the classification criteria are not met.
Other	According to the U.S. Environmental Protection Agency this substance presents a concern for hazard to the aquatic environment and reproductive toxicity.

Information on Likely Routes of Exposure

Inhalation	Avoid inhalation of the product
Ingestion	Ingestion is not a likely route of exposure
Skin	Avoid prolonged or repeated contact with skin
Eyes	Avoid contact with eyes Dust contact with the eyes can lead to mechanical irritation
Aspiration hazard	Not applicable. Solid.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties	This product does not contain any known or suspected endocrine disruptors
11.2.2. Other information	Not applicable

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SECTION 12: Ecological information

12.1. Toxicity Toxic to aquatic life with long lasting effects

Melamine poly(zinc phosphate)

WGK Classification (AwSV) WGK not established

12.2. Persistence and degradability Not readily biodegradable. (OECD 301 B).

12.3. Bioaccumulative potential

Bioconcentration factor (BCF) No data available.

12.4. Mobility in soil None.

12.5. Results of PBT and vPvB assessment This substance does not meet the criteria for classification as PBT or vPvB.

12.6. Endocrine disrupting properties This product does not contain any known or suspected endocrine disruptors

12.7. Other Adverse Effects None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator. Avoid release to the environment. Do not allow to enter into surface water or drains.

Contaminated Packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

Waste codes Waste codes should be assigned by the user based on the application for which the product was used

Melamine poly(zinc phosphate)

WGK Classification (AwSV) WGK not established

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SECTION 14: Transport information

Mode of Transportation (Road, Water, Air, Rail)

TDG -Canada	Not regulated in non-bulk packages (<119 gal/<882 lb) UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant
DOT	Not regulated in non-bulk packages (<119 gal/<882 lb) UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant
ADR	UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant
IATA	UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant
IMDG/IMO	UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant
ICAO	UN3077, Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate)), 9, PG III, Marine Pollutant

14.1. UN number UN3077

14.2. UN proper shipping name Environmentally hazardous substance, solid, n.o.s. (Melaminepoly(zinc phosphate))

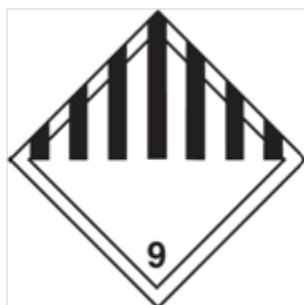
14.3. Transport hazard class(es) 9

14.4. Packing group III

14.5. Environmental hazards Toxic to aquatic life with long lasting effects

14.6. Special precautions for user Do not handle until all safety precautions have been read and understood.

14.7. Maritime transport in bulk according to IMO instruments



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SECTION 15: Regulatory information

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

Global Inventories

Pure substance/mixture

Substance

Chemical Name	CAS NUMBER:	EC No	Australia (AIC)	Canada (DSL)	China (IECSC)	Japan	S. Korea (KECL)	Mexico	Thailand (TECI)	New Zealand	Philippines (PICCS)	Taiwan	TSCA: United States
Melamine poly(zinc phosphate)	1271172-98-5	690-512-6	N	N	C1B222250023	N	N	N	N	N	N	N	PMN P-16-0484

X / Y: Complies ; A: Active ; - / N: Exempt / Not Listed

Regulatory information

Persistent Organic Pollutants (POP):

To the best of our knowledge, this is not manufactured with and does not intentionally contain substances listed in Annex I of Regulation (EU) 2019/1021 on persistent organic pollutants, as amended; also no ubiquitous or technical contamination is known.

Ozone-Depleting Substances (ODS):

To the best of our knowledge, contains no ozone-depleting substances as defined in Regulation (EU) 2024/590; also no ubiquitous or technical contamination is known.

REACH No.

Melamine poly(zinc phosphate)

EU REACH registration number 01-2120116104-75-xxxx
04-2120862008-56-0000
(PPORD)

Turkish KKDIK pre-registration 05-0000192734-61-0000
K-REACH registration number 04-2107-00272

Germany

Toxic to aquatic life with long lasting effects

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EPA has issued a Significant New Use Rule (SNUR) for Safire 400 at 40 C.F.R. §721.11190. The significant new uses are: (1) use other than as a flame-retardant additive in plastics; (2) release of a processing or use stream associated with any use of Safire 400 exceeding a surface water concentration of 34 ppb; and (3) processing or use of Safire 400 without employing the following engineering controls to limit exposure to dust: ventilation and negative-pressure systems with local exhaust (e.g., elephant trunks), and baghouse filtration, and enclosed unloading and transfer systems. Also, although not explicitly specified in the SNUR, we remind you that the product SDS recommends the use of an NIOSH-approved N95 dust respirator for workers potentially exposed to dusts containing Safire 400. You must also maintain records documenting compliance with the use limitations, i.e, use as a flame-retardant additive in plastics, and the use of the engineering controls described above to limit exposure to dust; records documenting establishment and implementation of procedures that ensure compliance with the 34 ppb water discharge limitation, records documenting volumes of Safire 400 you purchased in the United States, the names and addresses of suppliers, and the corresponding dates of purchase, and records documenting the names and addresses (including shipment destination address, if different) of all persons to whom you directly sell or transfer Safire 400, the date of each sale or transfer, and the quantity of Safire 400 sold or transferred on such date. Finally, if you export or intend to export Safire 400 on or after May 6, 2019 you are subject to the export notification provisions of TSCA section 12(b) (15 U.S.C. 2611(b)) (see § 721.20), and must comply with the export notification requirements in 40 CFR part 707, subpart D.

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out

SECTION 16: Other information

Reason for Revision

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 & COMMISSION REGULATION (EU) No. 2020/878

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(CLP) Regulation (EC 1272/2008) Hazardous to the aquatic environment - Chronic, category 2

Labeling**Symbols/Pictograms**

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None

Hazard Statements

H411 - Toxic to aquatic life with long lasting effects



Marine Pollutant

**Training Advice**

Do not handle until all safety precautions have been read and understood.

Abbreviations and acronyms

IARC (International Agency for Research on Cancer)
IUCLID (International Uniform Chemical Information Database)
WHMIS (Workplace Hazardous Materials Information System)
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
TWA (Time-Weighted Average)
CLP (The Classification, Labeling and Packaging of Substances and Mixtures Regulation (EC 1272/2008))
PPE (Personal Protection Equipment)
NIOSH (National Institute for Occupational Safety and Health)
CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
RQ (Reportable Quantity) (RQ/% in mixture)
STEL (Short Term Exposure Limit)
TLV® (Threshold Limit Value)
DNEL (Derived No Effect Level)
SVHC (Substances of Very High Concern)
BOD (Biochemical oxygen demand)
COD (Chemical oxygen demand)
ICAO (International Civil Aviation Organization)
IMDG (International Maritime Dangerous Goods)
ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
RID (Agreement Concerning the International Carriage of Dangerous Goods by Rail)
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
DOT (Department of Transportation)
TDG (Transport of Dangerous Goods) Canada
PNEC (Predicted No Effect Concentration)
SCBA (Self-Contained Breathing Apparatus) Positive Pressure
GHS (Globally Harmonized System)

HUBER

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TSCA (Toxic Substances Control Act)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet