

SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Product Name: Everflon PTFE Free Flow G401

Version: 1.0

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SDS Number: EF-PTFE-G401-001

SECTION 1. IDENTIFICATION

- **Product name:** Everflon PTFE Free Flow G401
- **Product code:** G401
- **CAS-No.:** 9002-84-0
- **Chemical name:** Polytetrafluoroethylene (PTFE)

Manufacturer or supplier's details

- **Company name of supplier:** Wuhan Everflon Fluoropolymers Co.,Ltd.
- **Address:** Wuhan, Hubei Province, China
- **Telephone:** 0086-185-7168-9228
- **Emergency telephone:** 0086-185-7168-9228
- **E-mail:** sales@everflon.com / contact@everflon.com

Recommended use of the chemical and restrictions on use

- **Recommended use:** Resin for automatic moulding, ram extrusion, and compression moulding (Free Flow grade).
- **Restrictions on use:** For industrial use only. Do not use or resell materials in medical applications involving implantation in the human body or direct contact with internal body fluids or tissues unless agreed to by Seller in a written agreement covering such use.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

- **Hazards for the product as supplied:** Not a hazardous substance or mixture.

GHS label elements

- No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required.

Other hazards

- **Thermal decomposition vapors:** The thermal decomposition vapors of fluorinated plastics may cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco.

- **Mechanical friction:** Granules or fine dust contact with eyes or skin can cause slight mechanical irritation or dryness.

Hazards resulting from reaction with other chemicals under normal conditions of use:

Conditions	Chemicals formed	Hazards
Thermal decomposition at elevated temperatures	Vapors of fluorinated plastics, carbonyl fluoride, hydrogen fluoride, carbon oxides	May cause polymer fume fever with flu-like symptoms in humans, especially when smoking contaminated tobacco. Hazardous decomposition products will be formed at elevated temperatures (refer to Section 10).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

- **Substance / Mixture:** Substance
- **Substance name:** Polytetrafluoroethylene
- **CAS-No.:** 9002-84-0
- **Concentration:** > 99.5%

Components

- **Hazardous ingredients:** Contains no hazardous ingredients according to OSHA Hazard Communication Standard (29 CFR 1910.1200).

SECTION 4. FIRST AID MEASURES

- **General advice:** In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt, seek medical advice.
- **If inhaled:** If inhaled, remove to fresh air. Get medical attention if symptoms occur or if polymer fume fever is suspected.
- **In case of skin contact:** Wash with water and soap as a precaution. If contact with molten material occurs, cool rapidly with cold water; do not attempt to peel polymer from skin and seek immediate medical attention.
- **In case of eye contact:** Flush eyes with water as a precaution. Remove contact lenses if present and easy to do. Get medical attention if irritation develops and persists.
- **If swallowed:** If swallowed, DO NOT induce vomiting. Rinse mouth thoroughly

with water. Get medical attention if symptoms occur.

- **Most important symptoms and effects, both acute and delayed:** Polymer fume fever (chills, fever, cough, shortness of breath, malaise). Transient mechanical irritation from granule friction.
- **Protection of first-aiders:** No special precautions are necessary for first aid responders under normal conditions.
- **Notes to physician:** Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES

- **Suitable extinguishing media:** Water spray, Alcohol-resistant foam, Carbon dioxide (CO₂), Dry chemical powder.
- **Unsuitable extinguishing media:** None known (avoid high-pressure water jets to prevent dispersing dust).
- **Specific hazards during fire fighting:** Exposure to combustion products may be a hazard to health.
- **Hazardous combustion products:** Hydrogen fluoride (HF), carbonyl difluoride (COF₂), potentially toxic fluorinated compounds, aerosolized particulates, Carbon oxides (CO, CO₂).
- **Specific extinguishing methods:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
- **Special protective equipment for fire-fighters:** Wear self-contained breathing apparatus (SCBA) for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- **Personal precautions, protective equipment and emergency procedures:** Follow safe handling advice (see Section 7) and personal protective equipment recommendations (see Section 8). Spilled granules represent a significant slipping hazard; clean up immediately.
- **Environmental precautions:** Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.
- **Methods and materials for containment and cleaning up:** Sweep up or vacuum up spillage using industrial equipment (equipped with HEPA filter) and collect in suitable container for disposal. Avoid dispersal of dust in the air (do not clear dust surfaces with compressed air).

SECTION 7. HANDLING AND STORAGE

- **Technical measures:** See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

- **Local/Total ventilation:** Use only with adequate ventilation. Local exhaust ventilation is required during hot processing.
- **Advice on safe handling:**
 - Do not breathe decomposition products or dust.
 - Handle in accordance with good industrial hygiene and safety practice.
 - Take care to prevent spills, waste and minimize release to the environment.
 - **Strictly prohibit smoking in handling areas.** Avoid contamination of tobacco products with polymer dust.
 - Wash hands thoroughly before breaks and after handling.
- **Conditions for safe storage:** Keep in properly labeled containers. Keep tightly closed in a cool, dry, and well-ventilated area. Store in accordance with particular national regulations.
- **Materials to avoid:** Do not store with strong oxidizing agents or molten alkali metals.
- **Further information on storage stability:** Stable under recommended storage conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

- Contains no substances with occupational exposure limit values in supplied granular state.

Occupational exposure limits of thermal decomposition products

Component s	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentrati on	Basis
Hydrogen fluoride	7664-39-3	TWA	0.5ppm(as Fluorine)	ACGIH
		C	2ppm(as Fluorine)	ACGIH
		TWA	3ppm(2.5mg/ m ³)	NIOSH REL
		C	6ppm(5mg/m ³)	NIOSH REL
		TWA	3\text{ ppm}	OSHA Z-2

Carbonyl difluoride	353-50-4	TWA	2\text{ ppm}	ACGIH
		STEL	5\text{ ppm}	ACGIH
		TWA	2ppm(5mg/m ³)	NIOSH REL
		ST	5ppm(15mg/m ³)	NIOSH REL
		TWA	2.5mg/m ³ (as Fluorine)	OSHA Z-1
Carbon dioxide	124-38-9	TWA	5,000\text{ ppm}	ACGIH
		STEL	30,000\text{ ppm}	ACGIH
		TWA	5,000ppm(9,000mg/m ³)	NIOSH REL
		ST	30,000ppm(54,000mg/m ³)	NIOSH REL
		TWA	5,000ppm(9,000mg/m ³)	OSHA Z-1
Carbon monoxide	630-08-0	TWA	25\text{ ppm}	ACGIH
		TWA	35ppm(40mg/m ³)	NIOSH REL
		C	200ppm(229mg/m ³)	NIOSH REL
		TWA	50ppm(55mg/m ³)	OSHA Z-1

Engineering measures

- Processing may form hazardous compounds (see Section 10).

- Ensure adequate ventilation, especially in confined areas.
- Minimize workplace exposure concentrations with local exhaust ventilation at molding/sintering machines.

Personal protective equipment

- **Respiratory protection:** General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators.
- **Hand protection:** Heat-resistant gloves during hot processing. General protective work gloves for room temperature handling.
- **Eye protection:** Wear safety glasses with side-shields (ANSI Z87.1 approved).
- **Skin and body protection:** Skin should be washed after contact. Standard protective workwear.
- **Hygiene measures:** If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the workplace. When using, do not eat, drink or smoke. Wash contaminated clothing before reuse.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance:** Granules (free-flowing)
- **Color:** White
- **Odor:** Odorless
- **Odor Threshold:** No data available
- **pH:** Not applicable
- **Melting point/freezing point:** > 608°F/ > 320°C
- **Initial boiling point and boiling range:** No data available
- **Flash point:** Not applicable
- **Evaporation rate:** Not applicable
- **Flammability (solid, gas):** Not classified as a flammability hazard; not expected to form explosive dust-air mixtures.
- **Upper / Lower explosion limit:** No data available / Not applicable
- **Vapor pressure:** Not applicable
- **Relative vapor density:** Not applicable
- **Density:** 2.14 - 2.20g/cm³
- **Solubility(ies) (Water solubility):** Insoluble
- **Partition coefficient: n-octanol/water:** No data available
- **Autoignition temperature:** No data available
- **Decomposition temperature:** > 716°F/ > 380°C
- **Viscosity (Viscosity, kinematic):** Not applicable
- **Explosive properties:** Not explosive
- **Oxidizing properties:** The substance or mixture is not classified as oxidizing.
- **Particle characteristics (Particle size):** Free-flowing granular form

SECTION 10. STABILITY AND REACTIVITY

- **Reactivity:** Not classified as a reactivity hazard.
- **Chemical stability:** Stable under normal conditions.
- **Possibility of hazardous reactions:** Can react with strong oxidizing agents. Can react vigorously with molten alkali metals and elemental fluorine at elevated temperatures. Hazardous decomposition products will be formed at elevated temperatures.
- **Conditions to avoid:** Excessive heating above 380°C (716°F).
- **Incompatible materials:** Oxidizing agents, molten alkali metals.
- **Hazardous decomposition products (Thermal decomposition):** Hydrogen fluoride (HF), Carbonyl difluoride (COF₂), Carbon dioxide (CO₂), Carbon monoxide (CO).

SECTION 11. TOXICOLOGICAL INFORMATION

- **Information on likely routes of exposure:** Skin contact, Ingestion, Eye contact, Inhalation.
- **Acute toxicity:** Not classified based on available information.
- **Skin corrosion/irritation:** Not classified based on available information.
- **Serious eye damage/eye irritation:** Not classified based on available information.
- **Respiratory or skin sensitization:** Not classified based on available information.
- **Germ cell mutagenicity:** Not classified based on available information.
- **Carcinogenicity:**
 - **IARC:** No ingredient of this product present at levels > 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
 - **OSHA:** No component of this product present at levels > 0.1% is on OSHA's list of regulated carcinogens.
 - **NTP:** No ingredient of this product present at levels > 0.1% is identified as a known or anticipated carcinogen by NTP.
- **Reproductive toxicity:** Not classified based on available information.
- **STOT-single exposure:** Not classified based on available information.
- **STOT-repeated exposure:** Not classified based on available information.
- **Aspiration toxicity:** Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

- **Ecotoxicity:** No data available. Due to insolubility in water and biological inactivity, acute toxicity to aquatic or terrestrial organisms is not expected.
- **Persistence and degradability:** Non-biodegradable. Highly persistent in the environment.
- **Bioaccumulative potential:** Not expected to bioaccumulate due to high molecular weight.
- **Mobility in soil:** Immobile in soil.

- **Other adverse effects:** No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- **Waste from residues:** Dispose of in accordance with local, state, and national regulations. Mechanical recycling should be explored where feasible. Can be incinerated in a licensed facility equipped with acid gas scrubbers. Do not dispose of waste into sewer.
- **Contaminated packaging:** Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

- **UNRTDG:** Not regulated as a dangerous good
- **IATA-DGR:** Not regulated as a dangerous good
- **IMDG-Code:** Not regulated as a dangerous good
- **Transport in bulk according to IMO instruments:** Not applicable for product as supplied.

Domestic regulation (USA)

- **49 CFR:** Not regulated as a dangerous good
- **Special precautions for user:** Not applicable

SECTION 15. REGULATORY INFORMATION

- **CERCLA Reportable Quantity:** This material does not contain any components with a CERCLA RQ.
- **SARA 304 Extremely Hazardous Substances RQ:** This material does not contain any components with a section 304 EHS RQ.
- **SARA 302 Extremely Hazardous Substances TPQ:** This material does not contain any components with a section 302 EHS TPQ.
- **SARA 311/312 Hazards:** No SARA Hazards.
- **SARA 313:** This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
- **TSCA:** All chemical substances in this product are listed on or exempt from the TSCA Inventory.

US State Regulations

- **Pennsylvania Right To Know:** Polytetrafluoroethylene (CAS-No. 9002-84-0)
- **California Prop. 65:** WARNING: This product can expose you to chemicals including Carbon monoxide, which is known to the State of California to cause

birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. *Note: This product is not made with PFOA nor is PFOA intentionally present in the product; however, trace background environmental impurities may be possible.*

SECTION 16. OTHER INFORMATION

NFPA 704 & HMIS® IV Rating

[Flammability: 1]
[Health: 0] [Instability: 0]
[Special: None]

- **HMIS® IV:** Health: 0 / Flammability: 1 / Physical Hazard: 0 / Personal Protection: See Sec. 8

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when used in combination with any other materials or in any process, unless specified in the text.