

SAFETY DATA SHEET

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

Product Name	FLUON® PTFE Granular & Coagulated Dispersion Grades
Address / Phone No.	AGC Chemicals Europe, Ltd. Hillhouse International Thornton Cleveleys Lancs FY5 4QD 01253 861800 E-Mail: info@agcce.com
Emergency Phone No.	+44 (0) 1235 239670
Use	Subject to Member State regulations, applicable uses are: mouldings and extrusions

2. HAZARDS IDENTIFICATION

Low oral toxicity.
The major health hazard associated with this material is the inhalation of thermal decomposition products.
Contamination of tobacco products MUST be avoided.

Classification of the substance or mixture

Directive 67/548/EEC & Directive 1999/45/EC	Not classified
Regulation (EC) No. 1272/2008 (CLP).	Not classified

3. COMPOSITION / INFORMATION ON INGREDIENTS

Product Description Polytetrafluoroethylene (PTFE) CAS No. 009002-84-0.

Note: The main constituent of this product is a polymer as defined under the REACH Regulation (EU) No 1907/2006 and is not subject to REACH registration.

4. FIRST AID MEASURES

Inhalation	Inhalation of fumes: Remove patient from exposure, keep warm and at rest. Obtain medical attention.
Skin Contact	If symptoms persist, obtain medical attention.
Eye Contact	Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. Obtain medical attention.
Ingestion	Do not induce vomiting. Wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Obtain medical attention.
Further Medical Treatment	Symptomatic treatment and supportive therapy as indicated. Inhalation of fumes: Keep under medical review for possible development of 'Polymer Fume Fever'. Following severe exposure the patient should be kept under medical review for at least 48 hours as delayed pulmonary oedema may develop.

5. FIRE-FIGHTING MEASURES

General	Low fire hazard. If a flame is applied to the material it will ignite but if the flame is removed then combustion ceases. Combustion or thermal decomposition will evolve very toxic and corrosive vapours. See Also Section 10
Extinguishing media	As appropriate for surrounding materials/equipment.
Fire Fighting Protective Equipment	A self contained breathing apparatus and full protective clothing must be worn in fire conditions. Wear neoprene gloves when handling refuse from a fire involving this product, to protect against possible contamination with hydrofluoric acid.

6. ACCIDENTAL RELEASE MEASURES

General	Caution - spillages may be slippery. Clear up spillages. Transfer to a container for disposal or recovery.
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7. HANDLING AND STORAGE

Handling	Avoid contact with naked flames and hot surfaces as corrosive and very toxic decomposition products can be formed. When using do not smoke. Contamination of tobacco products MUST be avoided. 'Polymer Fume Fever' is particularly associated with the smoking of contaminated tobacco products. Wash face and hands before eating, drinking or smoking. Care must be taken to avoid transfer of PTFE particles from hands or clothing onto materials which may be burnt. Extra care should be taken to prevent burns from contact with hot material.
Process Hazards	The major health hazard associated with this material is the inhalation of thermal decomposition products. Avoid inhalation of vapours that may be evolved at elevated temperatures. Processing coagulated dispersions requires the addition of a lubricant which is usually a volatile petroleum fraction. The use of these lubricants presents a significant fire and explosion hazard, particularly in in-line operations where the drying oven is immediately followed by a high temperature sintering oven. (Consult the Safety Data Sheet of the lubricant supplier for health and explosion data on the lubricant.) Sintering - Fume from high temperature processing may be toxic and corrosive. Exposure to fumes from the sintering and high temperature processing of PTFE may give rise to a condition called 'Polymer Fume Fever'. This condition is characterised by influenza type symptoms occurring a few hours after exposure and lasting up to 48 hours. Thermal decomposition at temperatures greater than 380 Deg C yields a range of highly toxic and corrosive products. Chemicals produced during thermal decomposition are highly dependent upon temperature and conditions. Exposure to these combustion/decomposition products must be avoided. Temperatures greatly in excess of the normal sintering range must be avoided. Sintering ovens should be fitted with automatic temperature cut-outs set to 20 Deg C above the sintering oven set point. Ovens must be regularly maintained to ensure adequate temperature control and to prevent air leaks to work areas. All heating processing equipment must be vented safely, to atmosphere outside the building. PTFE must be cleaned from equipment before any burning or welding takes place.
Storage	No special requirements.
Specific use	Subject to Member State regulations, applicable uses are: mouldings and extrusions

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

Wear suitable gloves if prolonged skin contact is likely. PVC gloves are suitable.
Approved dust mask and goggles should be worn if exposure to high dust levels are likely. Where a cartridge/canister respirator is suitable use: Type P3 CEN143. Check with protective equipment manufacturer's data.
Wear thermal insulating gloves and a face shield when handling hot masses.



Eye Protection

Wear protective eyewear (goggles, face shield, or safety glasses).



Gloves

PVC gloves are suitable.

Occupational exposure limits

Occupational exposure limits	CAS No.	LTEL (8 hr TWA ppm)	LTEL 8 hr TWA mg/m ³	STEL (ppm)	STEL mg/m ³	Note:
Dust (Total Inhalable Dust)			10			WEL
Dust (Respirable Dust)			4			WEL

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	powder
Colour.	white
Odour	odourless
Odour threshold (ppm)	Not applicable.
Solubility (Water)	insoluble
Solubility (Other)	insoluble in all common solvents.
Partition coefficient (n-Octanol/water)	Not applicable.
Boiling Point (° C)	Not applicable.
Melting Point (° C)	Not applicable.
Vapour pressure (Pascal)	Not applicable.
Density (g/ml)	2.2 at 20 ° C
Flash point (°C) [Closed cup]	Not applicable.
Flammable Limits (Upper) (%v/v)	Not applicable.
Flammable Limits (Lower) (%v/v)	Not applicable.
Explosive Properties	Non-explosive.
Oxidising Properties	Inert
pH (Value)	Not applicable.
Auto ignition point (°C)	575 approx
Decomposition temperature (°C)	>260 Significant decomposition above 400 Deg C.
Softening Point (°C)	342
Bulk Density (g/ml)	0.5 approx (Refer to grade technical data sheet for values)
Additional properties	Limiting Oxygen Index (% O ₂): 95 Underwriters Laboratory Rating: 94V-0

10. STABILITY AND REACTIVITY

Hazardous Reactions

Inert

Hazardous Decomposition Product(s)

Thermal decomposition will evolve very toxic and corrosive vapours. (hydrogen fluoride, carbonyl fluoride, tetrafluoroethylene, hexafluoropropene and perfluoroisobutene)
Chemicals produced during thermal decomposition are highly dependent upon temperature and conditions.

11. TOXICOLOGICAL INFORMATION

Inhalation	High concentrations of dust may be irritant to the upper respiratory tract. Fume from high temperature processing may be toxic and corrosive. Exposure to fumes from the sintering and high temperature processing of PTFE may give rise to a condition called 'Polymer Fume Fever'. This condition is characterised by influenza type symptoms occurring a few hours after exposure and lasting up to 48 hours. 'Polymer Fume Fever' can result from smoking tobacco products contaminated with PTFE.
Skin Contact	May cause physical abrasion in contact with skin.
Eye Contact	May cause physical abrasion in contact with eyes.
Ingestion	Low oral toxicity. Unlikely to be hazardous if swallowed.
Long Term Exposure	Repeated exposure to toxic and corrosive fume from the sintering and high temperature processing of PTFE may lead to adverse effects on the lungs or fluorosis.

12. ECOLOGICAL INFORMATION

Environmental Fate and Distribution	Solid with low volatility. The substance is essentially insoluble in water.
Toxicity	Adverse effects would not be expected.

13. DISPOSAL CONSIDERATIONS

Regulatory information	Disposal should be in accordance with local, state or national legislation.
Recommended	Bury on an authorised landfill site or incinerate under approved controlled conditions. This product may be incinerated above 800 Deg C using a scrubber to remove Hydrogen Fluoride.

14. TRANSPORT INFORMATION

Not Classified as Hazardous for Transport.

15. REGULATORY INFORMATION

European Regulations

Classification of the substance or mixture

Directive 67/548/EEC & Directive 1999/45/EC Not classified

According to Regulation (EC) No. 1272/2008 (CLP). Not classified

CONTAINERS WITH PTFE SHOULD HAVE THE FOLLOWING LABEL:

'WARNING: It is essential that tobacco products are kept well away from areas where they could be contaminated with PTFE dust. The smoking of tobacco products contaminated by PTFE can result in a temporary condition, characterised by influenza like symptoms, known as 'Polymer Fume Fever'. The symptoms do not ordinarily occur until several hours after the inhalation of the fumes and pass off within 36 to 48 hours even in the absence of treatment. When heated above 260 Deg C PTFE will begin to degrade and the rate of degradation will increase with increasing temperature. The gases produced during degradation will vary according to temperature and other conditions but will invariably contain toxic and corrosive components, therefore good ventilation is essential.'

16. OTHER INFORMATION

This data sheet was prepared in accordance with Regulation (EC) No. 1907/2006.

This product is not designed for special applications such as pharmaceutical or medical use. For other technical information, contact the address in Section 1.

Fluon® and Aflas® grades are general industrial grades. It is the responsibility of the purchaser to check that the specification is appropriate for any individual application. Particular care is required for special applications such as pharmaceutical, medical device or food.

Not all grades are suitable for making finished materials and articles for use in contact with foodstuffs. For the latest position it is advisable to contact the AGC Chemicals Europe, Ltd. sales office. This product is not designed for special applications such as pharmaceutical or medical use.

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GLOSSARY

WEL:	Workplace Exposure Limit (UK HSE EH40)
COM:	The company aims to control exposure in its workplace to this limit
TLV:	The company aims to control exposure in its workplace to the ACGIH limit
TLV-C:	The company aims to control exposure in its workplace to the ACGIH Ceiling limit
MAK:	The company aims to control exposure in its workplace to the German limit
Sk:	Can be absorbed through skin
Sen:	Capable of causing respiratory sensitisation
Bmgv:	Biological monitoring guidance value (UK HSE EH40)

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