

Technical Safety Information Sheet on a voluntary basis (TSIS)

according to EC 1907/2006, EU 2015/830

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Date of issue: 13.10.2015	Date of revision: 09.11.2016	Version: 3
1. Product- and company identification		
Productname	H14, H15, H19, H22, H23, H24 based Gas Diffusion Layer (GDL), this also includes impregnated or coated GDL materials.	
Company	Freudenberg Performance Materials • D-69465 Weinheim	
Telephone	+49 / 6201 80 - 0	
Telefax	+49 / 6201 88 - 0	
Information Department	Fuel Cell Products – Gas Diffusion Layer	
e-Mail address	fuelcell@freudenberg-pm.com	
Telephone	+ 49 / 6201 80 - 2690	
Telefax	+ 49 / 6201 88 - 4489	
2. Possible hazards		
Special hazard reference	No hazardous product under normal conditions. according to regulation (EC) 1272/2008 Accidental thermal decomposition or melting state may cause hazards.	
3. Composition / information on ingredients		
<p>This document provides Material Safety Information (TSIS) for nonwovens on a voluntary basis. The TSIS is a means of forwarding essential hazard information (including information on transport, handling, storage and emergency actions) from the supplier of a nonwoven product to the recipient of this product. As nonwovens are generally not hazardous, TSIS is not legally requested but must be considered as information. It is based on the EC recommendation for MSDS (EC 1907/2006). The information contained in this Material Safety Information Sheet has been compiled to the best of our knowledge upon the explicit request of the customer. Therefore, the manufacturer does not assume any liability with respect to the correctness and/or completeness of the information provided by this Material Safety Information Sheet. The customer in particular shall not be released from his duty to check all safety-relevant properties of the delivered nonwovens, and to comply with the local official regulations.</p>		
Chemical nature (product)		
Description	nonwoven fabric made out of carbon fiber	
Ingredients	Carbon CAS: 7440-44-0 (80 – 99,9 %) Polytetrafluorethylene CAS: 9002-84-0 (0 – 20 %)	
4. First-aid measures		
General advice	Under normal condition ...	
Inhalation	if a big amount of dust is inhaled remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen, and get medical attention immediately.	
Skin contact	wash with plenty of soap and water.	
Eye contact	in case of direct contact, immediately flush eyes with plenty of water for at least 15 minutes. If continued irritation, get medical attention.	
Ingestion	give victim a glass of water. Never give anything by mouth to an unconscious person. If adverse reaction, get medical attention immediately.	
Information for the doctor	no specific measures to be taken	
5. Fire fighting measures		
Suitable extinguishing media	Foam, carbon dioxide, water spray, extinguishing powder.	
Unsuitable extinguishing media	Direct water jet.	
Exposure hazards	In the event of fire or smoldering carbon dioxide (CO ₂), carbon monoxide and organic decomposition products may be generated. The thermal decomposition products are highly dependent upon the combustion conditions. Noxious or toxic fumes may be generated, some of which may be toxic or irritating.	
Protective equipment for fire fighters	Use self-contained breathing apparatus.	
Further information	For flammable and toxic fumes see § 10.	

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6. Accidental release measures	
Personal precautions	Protective mask (P1), if necessary
Environmental precautions	No specific measures to be taken
Methods for cleaning	Remove mechanically
Further information	None
7. Handling and storage	
Handling	Normal requirements
Protection against fire and explosion	No specific measure to be taken
Storage	Remove fine dust regularly Do not store together with oxidising agents
8. Expose controls and personal protection	
Technical protective measure	No specific measure to be taken. Ensure adequate ventilation on workstation.
Exposure control limits	No specific control limits. Use typical limits for dusts (see e.g. TRGS 900 or TLV-TWA).
Personal protective equipment	
Respiratory protection	Breathing apparatus in the event of high concentrations. Short term: filter apparatus, Filter P1
Hand protection	Butyl rubber, > 120 min (EN 374)
Eye protection	Tight closing safety glasses
Skin protection	Tight closing overall
General safety and hygiene measures	
Measures	Precautions similar to handling of chemicals are recommended. Do not inhale dust. Avoid contact with eyes.
9. Physical and chemical properties	
Appearance	textile fabric
Colour	black
Odour	none
Changes in physical state	
Boiling, melting, freezing point	(°C) Not applicable
Density	<1
Autoignition	Not applicable
Freezing temperature	(°C) Not applicable
Flash point	(°C) Not applicable
Ignition temperature	(°C) Not tested
Explosion hazard	Not applicable
Explosion limits	(Vol.-%) Not applicable
Vapour pressure	(mbar) Insoluble
decomposition temperature	(°C) > 650 (in air), finishing agent >290
Solubility in water	Insoluble
Solubility in other solvents	Not applicable
pH-value	Not applicable
Viscosity	Not applicable
Additional information	None
10. Stability and reactivity	
Conditions to avoid	Under thermal decomposition flammable and toxic fumes can be generated.
Substances to avoid	Can react with oxidising agents.
Hazardous decomposition products	None.
Additional information	None.

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11. Toxicological information	
Acute toxicity	not applicable / not known
Specific symptoms in animal experiments	not applicable / not known
Irritation effects	not applicable / not known
Sensitization	not applicable / not known
Subacute to chronic toxicity	not applicable / not known
Carcinogenicity, mutagenicity, teratogenicity	not applicable / not known
Information from practical experience	No fibres with diameter below 3 micrometers. The fibers are not breathable (IARC). Fiber abrasion can cause mechanical skin irritation.
Additional information	No toxic reaction known under normal conditions
Note	Under decomposition conditions; toxic fumes and contaminated water, see § 10.
12. Ecological information	
Biodegradability	Not biodegradable
Ecotoxicity	No ecotoxic effects are to be expected for regular transportation, storage and duly use.
Further ecological information	For transportation, storage, normal use, no toxicological effect known. Possible water pollution, if components are washed out.
13. Disposal considerations	
Product	Nonwovens can be disposed of as non-hazardous solid waste, under compliance with the local regulations.
Disposal code number	
AVV-Code	040222
14. Transport information	
	Not classified as dangerous in the terms of transport regulations.
15. Regulatory information	
Labelling according to EC-regulation	The product is not required to be labelled according to EC regulations.
National directives	Product is not subjected to special national regulations for duly use.
16. Other information	
	None
The information contained herein is based on the present state of knowledge and does not therefore guarantee certain properties. The technical safety information sheet only describes the products in aspect to their safety requirements. Recipients of our products must take on responsibility for observing existing laws and regulations.	

