

Freudenberg Performance Materials GmbH

Technical Safety Information Sheet on a voluntary basis (TSIS)

according to EC 1907/2006, EU 2015/830

Product name:

Date of issue: 13.10.2015		Date of revision: 17.11.2023		Version: 7	
1. Product- and company identification					
Productname		: H12, H14, H15, H19, H22, H23, H24, H30, H35, H52, H54, G12, G14, G23, G52, G54 based Gas Diffusion Layer (GDL), this also includes impregnated or coated GDL materials. E20, E30, E35 based Electrolysis Electrode materials, this also includes impregnated or coated or joined materials			
Company		: Freudenberg Performance Materials GmbH & Co. KG D-69465 Weinheim			
Information department		: Fuel Cell Products – Gas Diffusion Layer			
e-Mail address		: fuelcell@freudenberg-pm.com			
Telephone		: +49 / 6201 / – 7107 300			
2. Possible hazards					
		No hazardous product under normal conditions. according to regulation (EC) 1272/2008			
Special hazard reference		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).</p> <p><i>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.</i></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					
Inhalation		: In case of inhalation of dust, move 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 immedi-			

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Information for the doctor	ately. : 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 dependant 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.
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	
	Normal requirements
Handling	: No specific measure to be taken
Protection against fire and explosion	: Remove fine dust regularly
Storage	: 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

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Flash point	(°C)	: Not applicable
Ignition temperature	(°C)	: Not tested
Explosion hazard		: Not applicable
Explosion limits	(Vol.-%)	: Not applicable
Vapour pressure	(mbar)	: Not applicable
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.
Additional information		: None.
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.		

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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.