



# Material Safety Data Sheet

ORION ELECTROMATERIALS S. DE  
R.L. DE C.V.

**Product name:** METHOCEL™ F4M Premium Hydroxypropyl  
Methylcellulose

**Issue Date:** 18.10.2018

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ORION ELECTROMATERIALS S. DE R.L. DE C.V. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

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## 1. PRODUCT AND COMPANY IDENTIFICATION

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**Product name:** METHOCEL™ F4M Premium Hydroxypropyl Methylcellulose

**Recommended use of the chemical and restrictions on use**

**Identified uses:** Thickener. Binder. Film former. Processing aid. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**

ORION ELECTROMATERIALS S. DE  
R.L. DE C.V.  
AV PASEO DE LA REFORMA NO. 243  
PISO 8, COLONIA CUAUHTEMOC  
06500 DELEGACION CUAUHTEMOC CIUDAD DE MEXICO  
MEXICO

**Customer Information Number:**

01800 0834913  
SDSQuestion-NA@dupont.com

**EMERGENCY TELEPHONE NUMBER**

**24-Hour Emergency Contact:** 01-800-681-9531

**Local Emergency Contact:** +52 1 (55) 1863 022 HESCA

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## 2. HAZARDS IDENTIFICATION

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This product has been classified in accordance with the Globally Harmonized System of Classification and Labeling (GHS).

**Hazard classification**

This product is not hazardous per the Globally Harmonized System of Classification and Labelling (GHS).

**Other hazards**

May form combustible dust concentrations in air.

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

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**Synonyms:** Hydroxypropyl methyl cellulose  
This product is a substance.

Component	CASRN	Concentration
Hydroxypropyl methyl cellulose	9004-65-3	>= 90.0 - <= 100.0 %

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## 4. FIRST AID MEASURES

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### Description of first aid measures

#### General advice:

If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air; if effects occur, consult a physician.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes with plenty of water; remove contact lenses after the first 1-2 minutes then continue flushing for several minutes. Only mechanical effects expected. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** No emergency medical treatment necessary.

#### Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

#### Indication of any immediate medical attention and special treatment needed

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

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## 5. FIREFIGHTING MEASURES

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**Suitable extinguishing media:** Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

**Extinguishing Media to Avoid:** Not Determined

#### Special hazards arising from the substance or mixture

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Do not permit dust to accumulate. When suspended in air dust can pose an explosion hazard. Minimize ignition sources. If dust layers are exposed to elevated

temperatures, spontaneous combustion may occur. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Hand held dry chemical or carbon dioxide extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

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## **6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**Removal of ignition sources:** Keep away from sources of ignition - No smoking.

**Dust Control:** Use care to minimize generation of airborne dust.

**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Sweep up. Use care to minimize generation of airborne dust. Do not use water for cleanup. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

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## **7. HANDLING AND STORAGE**

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**Precautions for safe handling:** Keep away from heat, sparks and flame. No smoking, open flames or sources of ignition in handling and storage area. Electrically ground and bond all equipment. Good housekeeping and controlling of dusts are necessary for safe handling of product. Pneumatic conveying and other mechanical handling operations can generate combustible dust. To reduce the potential for dust explosions, electrically bond and ground equipment and do not permit dust to accumulate. Dust can be ignited by static discharge. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

**Conditions for safe storage:** Keep in a dry place. Store indoors. Store in a closed container. Store away from sources of heat or ignition. See Section 10 for more specific information.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value/Notation
Hydroxypropyl methyl cellulose	Dow IHG	TWA Total dust	10 mg/m3

### Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

#### Skin protection

**Hand protection:** Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

**Other protection:** No precautions other than clean body-covering clothing should be needed.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved particulate respirator.

The following should be effective types of air-purifying respirators: Particulate filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical state	powder
Color	White to off-white
Odor	Odorless
Odor Threshold	Odorless
pH	5 Aqueous solution
Melting point/range	No test data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable to solids
Flash point	<b>closed cup</b> Not applicable to solids
Evaporation Rate (Butyl Acetate = 1)	Not applicable to solids
Flammability (solid, gas)	May form combustible dust concentrations in air.

Lower explosion limit	Not applicable to solids
Upper explosion limit	Not applicable to solids
Vapor Pressure	Solid.
Relative Vapor Density (air = 1)	Not applicable to solids
Relative Density (water = 1)	1.3 <i>Volume Displacement</i>
Water solubility	Appreciable
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	<i>Other guidelines</i> Does not ignite before melting.
Decomposition temperature	140 °C <i>Differential Scanning Calorimetry (DSC)</i> Decomposes on heating.
Kinematic Viscosity	Solid.
Explosive properties	Not impact sensitive.
Oxidizing properties	No
Molecular weight	No test data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

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## 10. STABILITY AND REACTIVITY

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**Reactivity:** No data available

**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.

**Possibility of hazardous reactions:** Polymerization will not occur.

**Conditions to avoid:** Avoid temperatures above 130 °C

Exposure to elevated temperatures can cause product to decompose. Avoid static discharge.

**Incompatible materials:** Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases.

**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials.

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## 11. TOXICOLOGICAL INFORMATION

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*Toxicological information appears in this section when such data is available.*

### Acute toxicity

#### Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

For similar material(s):

LD50, Rat, > 10,000 mg/kg

**Acute dermal toxicity**

No adverse effects anticipated by skin absorption.

The dermal LD50 has not been determined.,

**Acute inhalation toxicity**

No adverse effects are anticipated from single exposure to dust. For respiratory irritation and narcotic effects: No relevant data found.

The LC50 has not been determined.,

**Skin corrosion/irritation**

Essentially nonirritating to skin.

**Serious eye damage/eye irritation**

Solid or dust may cause irritation or corneal injury due to mechanical action.

**Sensitization**

A similar material did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Repeated ingestion of similar cellulose by humans has not resulted in known significant adverse effects.

**Carcinogenicity**

Similar cellulose did not cause cancer in long-term animal studies.

**Teratogenicity**

Similar cellulose did not cause birth defects or other toxic effects to the fetus in laboratory animal studies.

**Reproductive toxicity**

In animal studies, a similar cellulose has been shown not to interfere with reproduction.

**Mutagenicity**

Similar cellulose were negative in both in vitro and animal genetic toxicity studies.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

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## **12. ECOLOGICAL INFORMATION**

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*Ecotoxicological information appears in this section when such data is available.*

#### Toxicity

##### Acute toxicity to fish

Material is practically non-toxic to aquatic organisms on an acute basis  
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

#### Persistence and degradability

**Biodegradability:** For this family of materials: Material is expected to biodegrade very slowly  
(in the environment). Fails to pass OECD/EEC tests for ready biodegradability.

#### Bioaccumulative potential

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular  
weight (MW greater than 1000).

#### Mobility in soil

No data available.

#### Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent,  
bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels  
of 0.1% or higher.

#### Other adverse effects

No data available

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### 13. DISPOSAL CONSIDERATIONS

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**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY  
OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local  
laws and regulations. Regulations may vary in different locations. Waste characterizations and  
compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR  
SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR  
MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE  
INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS  
INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR  
UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed,  
permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Landfill.

**Treatment and disposal methods of used packaging:** Empty containers should be recycled or  
otherwise disposed of by an approved waste management facility. Waste characterizations and  
compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use  
containers for any purpose.

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### 14. TRANSPORT INFORMATION

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#### Classification for ROAD and Rail transport:

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

**Transport in bulk  
according to Annex I or II  
of MARPOL 73/78 and the  
IBC or IGC Code**

Not regulated for transport  
Consult IMO regulations before transporting ocean bulk

**Classification for AIR transport (IATA/ICAO):**

Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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## **15. REGULATORY INFORMATION**

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It is recommended the customer to check in the location of use of this product whether it is specifically regulated for human perusal or veterinary applications, as food and pharmaceuticals additives or packaging, domissanitary, and cosmetics, or even as controlled agent recognized as precursor to drug, chemical weapons, and ammunition manufacture.

The communication of the hazards of this product is in accordance with local and international legislations, observing always the most restrictive requirement.

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## **16. OTHER INFORMATION**

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**Product Literature**

Additional information on this and other products we offer may be obtained by contacting us. Ask for a product information brochure or data on how to access our website.

**Hazard Rating System**

**NFPA**

Health	Flammability	Instability
1	2	0

**Revision**

Identification Number: 2948 / A672 / Issue Date: 18.10.2018 / Version: 1.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Dow IHG	Dow Industrial Hygiene Guideline
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TWA	Time Weighted Average (TWA):
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**Full text of other abbreviations**

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; CPR - Controlled Products Regulations; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

The information is considered as correct, but not exhaustive, and will be used only as a guide, which is based in the current knowledge of the substance or mixture, and is applicable to proper safety precautions for the product.

ORION ELECTROMATERIALS S. DE R.L. DE C.V. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any

source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.  
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