



SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Carbon Fiber
Product Codes: Carbon Fiber Fabric, 12K
Manufacturer's/Distributor's Name: Hi Temp Products of Canada, Inc.
Manufacturer's/Distributor's Address: Hi Temp Products of Canada, Inc.
16810 – 129 Avenue, NW
Edmonton, AB T5V 1L2
Emergency Telephone Number: 780-424-1829

SECTION 2 - COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	CAS Registry No.	Weight %	Exposure Limits
Carbon fiber	7440-44-0	≥ 99%	See Note 1 below
Respirable fibrous carbon dust	not assigned	not known*	not known*

Notes on Composition and Information on Ingredients

*AMOUNT WILL BE DEPENDENT UPON METHOD OF HANDLING
NE = Not established

¹ OSHA and ACGIH have not established air contaminant limits for carbon fibers. Under certain conditions, this substance may be a nuisance dust. OSHA has an established standard for particulates not otherwise regulated (nuisance dust) set at 5 mg/m³ (respirable fraction) and 15 mg/m³ (total dust). ACGIH has established an exposure value of 3 mg/m³ (respirable fraction) and 10 mg/m³ (inhalable fraction) for particulates not otherwise classified.

SECTION 3 - HAZARDS IDENTIFICATION

Emergency Overview

Black continuous carbon fiber. Not expected to present an immediate concern for emergency response personnel. Not expected to present an immediate acute health, reactivity, or flammability hazard. Not expected to present an environmental hazard. Carbon fibers are electrically conductive and may cause a short circuit in electrical equipment if filaments become airborne during cutting.

POTENTIAL HEALTH EFFECTS

SKIN: May cause skin irritation. Mechanical irritation may occur from carbon fiber abrading or becoming imbedded in the skin. Chemical irritation may occur from exposure to sizing present on the carbon fiber.

EYES: Fragments of this product may cause mechanical eye irritation. Chemical irritation may occur from exposure to sizing present on the carbon fiber.

INHALATION: Inhalation exposure to respirable fibers of this product is not expected to occur under normal industrial conditions. Under very limited circumstances, however, exposure to respirable fibers of this product can occur and may result in respiratory tract irritation.

INGESTION: Not expected to occur during industrial activities since ingestion is not a relevant route of exposure.

CHRONIC EFFECTS/CARCINOGENICITY: Not regulated as a carcinogen. There are no chronic effects/carcinogenicity data available on this product. Under very limited circumstances, exposure to respirable fibers of this product can occur and may result in respiratory tract irritation; prolonged exposure may result in more adverse effects. See Section 11 – *Toxicological Information* for information on subchronic toxicity.

NTP: *Not listed*
IARC: *Not listed*
OSHA: *Not listed*

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

INCOMPATIBILITY: Not known.

SIGNS AND SYMPTOMS OF EXPOSURE: May result in slight skin and eye irritation.

SECTION 4 - FIRST AID MEASURES

FIRST AID MEASURES

SKIN: Wash fibers off of skin with water and soap. If fibers are imbedded in the skin, remove with tweezers. Discard clothing that may contain imbedded fibers. Get medical attention if exposure results in adverse effects.

EYES: Immediately flush with a continuous water stream for at least 20 minutes. Washing immediately after exposure is expected to be effective in preventing damage to the eyes. Get medical attention.

INHALATION: If there is inhalation exposure to the fibers of this product, remove source of exposure and move victim to fresh air. If not breathing give artificial respiration. If there is breathing difficulty, give oxygen. Get immediate medical attention for any respiratory problems.

INGESTION/SWALLOWED: Not expected to occur since ingestion is not a likely route of exposure for this product. If ingestion does occur, do not induce vomiting. Nothing by mouth if unconscious. Get immediate medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: Not applicable

EXPLOSION/FLAMMABLE LIMITS: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

EXTINGUISHING MEDIA: This material is not expected to burn in a fire. If this product is present in a fire, fight fire based on the presence of flammable materials.

SPECIAL FIRE FIGHTING PROCEDURES: As in any fire, wear a self-contained breathing apparatus pressure demand (MSHA/NIOSH approved or equivalent) and full protective gear. Fight fires from a safe distance or protected areas. Fire hoses with fog nozzles may be used for controlling fires but care must be exercised not to spread flaming. Water may not always be effective for large fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Under high heat (> 750 °C), this product may react with oxygen to give off carbon oxides and other decomposition products.

OTHER INFORMATION: This product is not expected to burn. Do not incinerate carbon fibers since airborne fibers may cause electrical malfunctions. See Section 13 – *Disposal Considerations* for additional information.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

SPILL/RELEASE AND CLEANUP PROCEDURES: In case of spill, collect (e.g., sweep up, vacuum, etc.) spilled material and either reuse or dispose of properly. Chopped or milled carbon fibers may be slippery if spilled posing an accident risk. Wear personal protective equipment as described in Section 8 during cleanup activities.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store in a cool, dry place. Wash hands with soap and water after handling. Wear appropriate protective clothing as described in Section 8 during handling activities.

SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

RESPIRATORY PROTECTION: Normal use and processing of this product are not expected to generate carbon fiber dust. Respirable fibers of this product under certain very limited circumstances can be generated. In such circumstances, HEPA respiratory protection should be used to prevent exposure

PROTECTIVE GLOVES: Latex gloves should be worn when handling this product. Rinse and remove gloves after use, and wash hand thoroughly with soap and water. Gloves should be removed and replaced if there are any signs of degradation or breakthrough.

PROTECTIVE CLOTHING: Wear protective clothing to minimize the potential for skin contact. An emergency shower should be readily accessible. Discard any clothing that has become contaminated.

EYE PROTECTION: Wear safety goggles or glasses when handling or processing this product in any form.

AIR MONITORING: No information is available.

EXPOSURE GUIDELINES: OSHA and ACGIH have not established air contaminant limits for carbon fibers. Under certain conditions, this substance may be a nuisance dust. OSHA has an established standard for particulates not otherwise regulated (nuisance dust) set at 5 mg/m³ (respirable fraction) and 15 mg/m³ (total dust). ACGIH has established an exposure value of 3 mg/m³ (respirable fraction) and 10 mg/m³ (inhalable fraction) for particulates not otherwise classified.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Black continuous fiber
Odor:	None
Specific Gravity:	1.75 - 1.85
Vapor Pressure:	None
Melting Point:	Not applicable
Solubility in Water:	Insoluble

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable.

CONDITIONS TO AVOID: None.

INCOMPATIBILITY/MATERIALS TO AVOID: Do not expose to strong oxidizing agents such as fluorine. Carbon fiber can react violently with such compounds.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Not expected under normal conditions of processing and use. Thermal decomposition of sizing may begin to occur at high temperatures (> 120 °C) resulting in the release of small amounts of nitrogen oxides, carbon monoxide, organic compounds, and other potentially hazardous substances.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICOLOGICAL DATA: There are no acute toxicological data available on this product. The oral, dermal, and inhalation acute toxicity are expected to be very low.

EYE IRRITATION DATA: No data are available.

SKIN IRRITATION DATA: No data are available.

SKIN SENSITIZATION DATA: No data are available.

SUBCHRONIC TOXICITY: Two sub-chronic inhalation tests in rats exposed to carbon fibers have been conducted. In one test, rats were exposed to fibers for 16 weeks. Pulmonary function tests performed on the test animals before necropsy did not show any significant or consistent changes. The only pulmonary finding related to exposure was the occurrence of phagocytosis by alveolar macrophages. No

inflammation or fibrosis was observed. In the second study, rats were also exposed to carbon fibers for 16 weeks. Based on clinical signs, no effects due to exposure were observed. Histopathological evaluation revealed non-fibrous particles in the pulmonary lymphoid clearance system and in alveolar macrophages. There were no signs of fibrosis.

REPRODUCTIVE TOXICITY: No data are available.

TERATOGENICITY (birth defects): No data are available.

MUTAGENICITY: Several *in vitro* mutagenicity tests have been performed on carbon fibers. Carbon fibers have been found to be negative in the gene mutation assay in bacteria (Ames test), did not cause sister chromatid exchanges in Chinese hamster ovary (CHO) cells, and did not cause unscheduled DNA synthesis in rat liver cells or forward mutations in studies with CHO cells.

CHRONIC EFFECTS/CARCINOGENICITY: No data are available.

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL DATA: No data are available.

ENVIRONMENTAL FATE DATA: No data are available.

PHYSICAL/CHEMICAL PROPERTIES: No data are available.

SECTION 13 - DISPOSAL CONSIDERATIONS

RCRA CLASSIFICATION: If discarded in its manufactured form, this product is not expected to be a characteristic or specifically listed hazardous waste under RCRA. However, it is the responsibility of the user to determine at the time of disposal whether a material containing the product or derived from the product should be classified as a hazardous waste.

SPECIAL INSTRUCTIONS: Do not incinerate carbon fibers since airborne fibers may cause electrical malfunctions. Any disposal practices must be in compliance with federal, state, and local requirements.

SECTION 14 - TRANSPORT INFORMATION

U.S./INTERNATIONAL SHIPPING INFORMATION UNDER DOT/IMO/IATA REGULATIONS: This product is not regulated as dangerous or hazardous goods under DOT, IMO, ICAO, IATA, or UN shipping regulations.

SECTION 15 - REGULATORY INFORMATION

REGULATORY STATUS: This product, as well as its impurities, may trigger specific reporting, recordkeeping, and testing requirements under TSCA, EPCRA/SARA III, RCRA, CERCLA, CAA, SDWA, and CWA.

OTHER STATE CHEMICAL LISTS: This product contains no chemicals known to be present on any state chemical lists.

SECTION 16 - OTHER INFORMATION

SDS REVIEWED FOR CONTENT & ACCURACY:

June 28, 2018

DISCLAIMER:

This information is furnished without warranty, expressed or implied, except that it is believed to be accurate to the best knowledge of Hi Temp products of Western Canada, Inc. The information presented in this SDS is related only to the specific material designated herein. Hi Temp Products of Western Canada, Inc. assumes no legal responsibility for the use or reliance upon these data. The user should review any recommendation in the specific context of the intended use to determine whether appropriate.



FICHE DE DONNÉES DE SÉCURITÉ

SECTION 1 - IDENTIFICATION

Nom du produit: Fibre de carbone

Codes de produit: Tissu en fibre de carbone, 12K

Nom du fabricant / distributeur: Hi Temp Products of Canada, Inc.

Adresse du fabricant / distributeur: Hi Temp Products of Canada, Inc.
16810 – 129 Avenue, NW
Edmonton, AB T5V 1L2

Numéro de téléphone d'urgence: 780-424-1829

SECTION 2 - COMPOSITION / INFORMATION DES INGRÉDIENTS

Ingrédient	No de registre CAS	Poids%	Les limites d'exposition
Fibre de carbone	7440-44-0	≥ 99%	Voir note 1 ci-dessous
Poussière de carbone respirante	Non assigné	ne pas connu*	ne pas connu*

Notes sur la composition et l'information sur les ingrédients :

* LE MONTANT SERA DEPENDANT DE LA METHODE DE MANIPULATION
NE = Non-établi

1 L'OSHA et l'ACGIH n'ont pas établi de limites de contaminants atmosphériques pour les fibres de carbone. Sous certaines conditions, cette substance peut être une poussière nuisible. L'OSHA a une norme établie pour les particules non réglementées (poussière nuisible) fixées à 5 mg / m³ (fraction respirable) et 15 mg / m³ (poussière totale). L'ACGIH a établi une valeur d'exposition de 3 mg / m³ (fraction respirable) et 10 mg / m³ (fraction inhalable) pour les particules non classées autrement.

SECTION 3 - IDENTIFICATION DES DANGERS

*** Vue d'ensemble des urgences ***

Fibre de carbone continu noir. Ne devrait pas préoccuper immédiatement le personnel d'intervention d'urgence. Ne pas attendre de présenter un risque de santé, de réactivité ou d'inflammabilité aiguë immédiate. Ne devrait pas présenter de danger pour l'environnement. Les fibres de carbone sont électriquement conductrices et peuvent provoquer un court-circuit dans un équipement électrique si les filaments deviennent aériens pendant la coupe.

EFFETS POTENTIELS SUR LA SANTÉ

PEAU: Peut provoquer une irritation de la peau. Une irritation mécanique peut provenir d'une abrasion des fibres de carbone ou de l'incorporation de la peau. Une irritation chimique peut provenir de l'exposition au dimensionnement présent sur la fibre de carbone.

YEUX: Des fragments de ce produit peuvent provoquer une irritation mécanique des yeux. Une irritation chimique peut provenir de l'exposition au dimensionnement présent sur la fibre de carbone.

INHALATION : L'exposition par inhalation à des fibres respirables de ce produit ne devrait pas se produire dans des conditions industrielles normales. Dans des circonstances très limitées, cependant, l'exposition à des fibres respirables de ce produit peut se produire et peut entraîner une irritation des voies respiratoires.

INGESTION: Ne devrait pas se produire pendant les activités industrielles car l'ingestion n'est pas une voie d'exposition pertinente.

nécropsie n'ont pas montré de changements significatifs ou cohérents. Le seul résultat pulmonaire lié à l'exposition était la présence de phagocytose par les macrophages alvéolaires. Aucune inflammation ou fibrose n'a été observée. Dans la deuxième étude, les rats ont également été exposés à des fibres de carbone pendant 16 semaines. Sur la base des signes cliniques, aucun effet dû à l'exposition n'a été observé. L'évaluation histopathologique a révélé des particules non fibreuses dans le système de dépollution lymphoïde pulmonaire et dans les macrophages alvéolaires. Il n'y avait aucun signe de fibrose.

TOXICITÉ REPRODUCTIVE: Aucune donnée n'est disponible.

TERATOGENICITÉ (malformations congénitales): aucune donnée disponible.

MUTAGÉNICITÉ: Plusieurs tests de mutagenicité in vitro ont été effectués sur des fibres de carbone. On a constaté que les fibres de carbone étaient négatives dans le test de mutation des gènes dans les bactéries (test d'Ames), n'ont pas induit l'échange de chromatides sœurs dans des cellules d'ovaire de hamster chinois (CHO) et n'ont pas provoqué de synthèse d'ADN imprévue dans des cellules de foie de rat ou des mutations avant étudiées avec Cellules CHO.

EFFETS CHRONIQUES / CARCINOGENICITÉ: Aucune donnée n'est disponible.

SECTION 12 - INFORMATION ÉCOLOGIQUE

DONNÉES ÉCOTOXICOLOGIQUES: Aucune donnée n'est disponible.

DONNÉES RELATIVES À L'ENVIRONNEMENT: Aucune donnée n'est disponible.

PROPRIÉTÉS PHYSIQUES / CHIMIQUES: Aucune donnée n'est disponible.

SECTION 13 - CONSIDÉRATIONS RELATIVES À L'ÉLIMINATION

CLASSIFICATION RCRA: S'il est disposé sous sa forme, ce produit ne sera pas un déchet dangereux sous RCRA. Toutefois, il est de la responsabilité de l'utilisateur de déterminer au moment de l'élimination si un matériau contenant le produit ou dérivé du produit doit être classé comme un déchet dangereux.

INSTRUCTIONS SPÉCIALES: Ne pas incinérer des fibres de carbone puisque les fibres en suspension dans l'air peuvent provoquer des dysfonctionnements électriques. Toutes les pratiques d'élimination doivent être conformes aux exigences fédérales, locales et locales.

SECTION 14 - INFORMATIONS DE TRANSPORT

U.S./RENSEIGNEMENTS D'EXPÉDITION INTERNE / INTERNATIONAL EN VERTU DE RÈGLEMENT DOT / IMO / IATA: Ce produit n'est pas réglementé en tant que marchandises dangereuses ou dangereuses en vertu des règlements d'expédition DOT, IMO, ICAO, IATA ou ONU.

SECTION 15 - INFORMATIONS RÉGLEMENTAIRES

STATUT RÉGLEMENTAIRE: Ce produit, ainsi que ses impuretés, peut déclencher des exigences spécifiques en matière de rapports, de tenue de dossiers et d'essais en vertu de TSCA, EPCRA / SARA III, RCRA, CERCLA, CAA, SDWA et CWA.

AUTRES LISTES CHIMIQUES D'ÉTAT: Ce produit ne contient aucun produit chimique connu pour être présent sur toute liste chimique d'état.

SECTION 16 - AUTRE INFORMATION

SDS EXAMINE POUR LE CONTENU ET L'EXACTITUDE:

28 juin 2018

ATTENTION: Cette information est fournie sans garantie, expresse ou implicite, sauf qu'il est censé être précis pour la meilleure connaissance des produits Hi Temp d'Western Canada, Inc. L'information présentée dans cette SDS est liée uniquement au matériel spécifique désigné ici. L'utilisateur devrait examiner toute recommandation dans le contexte spécifique de l'utilisation prévue pour déterminer s'il y a lieu.