Material Safety Data Sheet

U.S. Department of Labor
Occupational Safety and Health Administration
This form is consistent with ANSI standard for preparation of MSDS's in accordance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

Product Type: STIX	
Product Code: 7854	**Profile No:** 42
Effective Date: December 30, 2011	**Supersedes:**

SECTION I - PRODUCT AND COMPANY INFORMATION

Product Name	Activated Carbon (Coal Based)	
Product Use	Used according to manufacturer's recommendation	
Company Identification (USA)	**Calgon Carbon Corporation** P.O. Box 717 Pittsburgh, PA 15230-0717	
Telephone Number(s)	Information	412-787-6700
	Emergency	412-787-6700
Company Identification (Europe)	**Chemviron Carbon** Zoning Industriel de Feluy B-7181 Feluy, Belgium	
Telephone Number(s)	Information	32 64 51 18 11
	Emergency	32 64 51 18 11

Date Prepared	Signature of Preparer (optional)	
May 7, 2014		

SECTION II – HAZARD(S) IDENTIFICATION

OSHA Regulatory Status:		The potassium hydroxide component of this product is classified as Hazardous by OSHA.	
HMIS Ratings:	Health	3	4 = Extreme/Severe 3 = High/Serious 2 = Moderate 1 = Slight 0 = Minimum W = Water Reactive OX = Oxidizer
(NFPA)	Flammability	1	
	Reactivity	2	
	Special		
Protective Equipment :	Safety glasses with side shields or goggles, gloves, long sleeve shirt or lab coat, long pants recommended. Material may be corrosive.		
Health Effects:	See Section IV.		
Environmental Effects:	See Section XII.		

GHS Classification:

Hazard Symbol	Hazard / Category	Warning
	Respiratory Irritation Category 3 Skin Irritation Category 2 Eye Irritation Category 2A Aquatic Toxicity Category 4	Causes respiratory, skin and eye irritation. The dried impregnant is corrosive when wetted. Prolonged contact with dust could have a destructive effect upon tissue. Harmful if ingested. May cause long harmful effects to aquatic life. Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space.
Precautionary Statements		
Prevention:	Avoid generation of dust during handling. The dust or fines may be more susceptible to catalytic reaction than the large mesh product. Avoid breathing dust. Wash thoroughly after handling. Use in a well-ventilated area. Avoid release to environment.	
Response:	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention for any breathing difficulty. IF IN EYES: Rinse cautiously with water for several minutes. Seek medical attention if irritation persists. CONTACT WITH SKIN: Remove contaminated clothing. Rinse cautiously with soap and water for several minutes. Seek medical attention if irritation persists. IF INGESTED: Drink a large volume of water; seek medical attention.	
Storage:	Store in a well-ventilated place. Keep container tightly closed.	
Container Labeling:	While Calgon Carbon Corporation has added GHS classification information to MSDS documents, changes to container labeling has not been implemented. Changes to container labels will be made in accordance to the requirements to be defined by OSHA's revision to the Hazard Communication Standard once final adoption of rule is approved and released.	

SECTION III – COMPOSITION /INFORMATION ON INGREDIENTS

Nonhazardous components are listed at 3% or greater; acute hazards are listed when present at 1% or greater and chronic hazards are listed when present at 0.01% or greater. This is not intended to be a complete compositional disclosure.

Chemical Identity (% by Wt)	Common Name (Ingredient / Component)	CAS No	Impurities
≥90	Activated Carbon	7440-44-0	None
≤ 10	Potassium Hydroxide (KOH)	1310-58-3	None

NOTE: Active ingredient for impregnation is aqueous potassium hydroxide. Upon drying the form of the remnant impregnant is as alkaline potassium salts.

SECTION IV – FIRST-AID MEASURES

Route of Exposure	
Inhalation	Dust may cause mild irritation to the upper respiratory tract; may result in chemical burns to nose and throat.
Skin	Dust may cause mild irritation, possibly reddening. Skin contact could result in burns.
Eyes	Dust may cause mild irritation, possibly reddening. Prolonged exposure could cause burns and vision impairment or blindness.
Ingestion	Dust may cause mild irritation to digestive track resulting in nausea or diarrhea. Swallowing could cause burns of the mouth, throat and stomach.
Signs/Symptoms of Exposure	Dust may cause irritation and redness of eyes, irritation of skin and respiratory system. The effects of long-term, low-level exposures to this product have not been determined.
Emergency and First Aid Procedures	For eye contact: Immediately flush with copious amounts of water for at least 15 minutes, lifting both the upper and lower lids occasionally; seek medical attention. For skin contact: Wash with soap and water; seek medical attention. For inhalation: Remove to fresh air and rest as needed; seek medical attention for any breathing difficulty. For ingestion: Drink plenty of water; seek medical attention.
Medical Conditions Generally Aggravated by Exposure	People with pre-existing skin conditions or eye problems or impaired respiratory function may be more susceptible to the potential effects of the dust.

SECTION V – FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use an extinguishing media suitable for surrounding the fire.
Unsuitable Extinguishing Media	None known
Specific Hazards	As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. Activated carbon is difficult to ignite and tends to burn slowly (smolder)

	without producing smoke or flame. Carbon monoxide and carbon dioxide gases and nitrogen oxide gases may be generated if material is combusted. Thermal oxidation can produce toxic fumes of potassium oxide. Contact with strong oxidizers such as ozone or liquid oxygen may cause rapid combustion.
Protective Equipment and Procedures	Wear NIOSH approved self-contained breathing apparatus suitable for the surrounding fire.
Unusual Fire and Explosion Hazard	The product when in large vessels under static conditions is susceptible to exothermic reaction on contact with an oxidizable material. Flooding the vessel with water will extinguish any hot zones. Steam could be generated in the process of extinguishing any hot zones.

SECTION VI – ACCIDENTAL RELEASE MEASURES

Personal Precautions	Wear protective equipment, keep unnecessary personnel away, and ventilate area of spill.
Environmental Precautions	Impregnant component is water soluble. The carbon portion is not. The dust and fine particles can cause a particulate emission if discharged to waterways. Dike all entrances to sewers and drains to avoid introducing the material into the waterways.
Containment & Clean-up	Dike all entrances to sewers and drains. Vacuum or shovel spilled material and place in closed container for disposal. Remove product to appropriate storage area until it can be properly disposed of in accordance with local, state and federal regulations. Avoid dust formation. See section XIII.
Other Information	NA

SECTION VII – HANDLING AND STORAGE

Precautions for Safe Handling	Avoid prolonged contact with eyes and skin. Keep away from ignition sources. Use in well ventilated areas. Protect containers from physical damage. Wash hands after handling.
Conditions for Safe Storage	Store in cool, dry, ventilated area and in closed containers. Keep away from oxidizers, heat or flames. Store away from ignition sources.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

NOTE: PEL, TLV and Toxicological data when available are provided for the pure component knowing that the carbon product contains a lesser percentage.

Component	OSHA PEL	ACGIH TLV	Other Limits
Activated Carbon	Data not available	Data not available	
Alkaline Potassium Salts	2 mg/M ^{3} (Ceiling)	2 mg/M ^{3} (Ceiling)	
Exposure Guidelines	Wet activated carbon removes oxygen from air posing a hazard to workers in enclosed or confined space. Before entering such an area, sample the air to assure sufficient oxygen supply. Use work procedures for low oxygen levels, observing all local, state and federal regulations.		
Engineering Controls	Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace and safely remove carbon black from the air. Note: Wet activated carbon removes oxygen from air causing a severe hazard to workers in enclosed or confined space. If risk of overexposure exists, wear an approved respirator. Provide adequate ventilation in warehouse or closed storage area.		
Personal Protective Equipment	Use of NIOSH approved particulate filter is recommended if dust is generated in handling. The usual precautionary measures for handling chemicals should be followed, i.e. gloves, safety glasses w/side shields or goggles, long sleeve shirt or lab coat, dust respirator if dusty and/or other protective clothing/equipment as determined appropriate.		
General Hygiene	The usual precautionary measures for handling chemicals should be followed: i.e. Keep away from food and beverage; remove contaminated clothing immediately; wash hands before breaks or eating; avoid contact with eyes and skin.		

SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Physical State (Appearance)		Black granular, pellet or powder material	
Color	Black	**Molecular Weight**	NA
Odor	None	**Odor Threshold**	None
pH Value	NA	**Vapor Pressure**	0
Melting Point	NA	**Vapor Density**	Solid
Freezing Point	NA	**Relative Density**	0.4 to 0.7
Initial Boiling Point	NA	**Solubility**	Impregnant component is soluble.
Flashpoint	NA	**Partition Coefficient**	NA
Evaporation Rate	NA	**Auto Ignition Temp.**	Ignition Temperature >140^0 C
Flammability	Ignition Temperature >140^0 C	**Decomp. Temp.**	NA

UEL	NA	**Viscosity**	NA
LEL	NA		

SECTION X – STABILITY AND REACTIVITY

CHEMICAL STABILITY	**UNSTABLE**		**CONDITIONS TO AVOID:** None
	STABLE	**XX**	
POSSIBILITY OF HAZARDOUS REACTION	**MAY OCCUR**		**CONDITIONS TO AVOID:** None
	WILL NOT OCCUR	**XX**	
Caution: High concentrations of organics in air will cause temperature rise due to heat of adsorption. At very high concentration levels this may result in a thermal excursion, referred to as a bed fire. High concentrations of Ketones and Aldehydes may cause a bed temperature rise due to adsorption and oxidation.			
Materials to Avoid			Alkali metals and strong oxidizers such as ozone, oxygen, permanganate, chlorine.
Hazardous Decomposition Products			Carbon monoxide and carbon dioxide gas may be generated during combustion of this material. Thermal oxidation can produce toxic fumes of potassium oxide.

SECTION XI – Toxicological information

NOTE: Toxicological data is provided for the pure component knowing that the carbon product contains a lesser percentage.		
Acute Effects		
Toxicity Studies	Oral LD_{50}	Not determined on the finished product. **Potassium Hydroxide:** LD_{50} = 273 mg/kg (rat)
	Dermal LD_{50}	Not determined on the finished product.
Inhalation	See section IV.	
Ingestion	See section IV.	
Eye Irritation	See section IV.	
Skin Irritation	See section IV.	
Sensitization	Not determined on the finished product.	
Target Organ (s) or System		Eyes, skin, and upper respiratory system
Signs and Symptoms of Exposure		Irritation of eyes and respiratory system may result from exposure to carbon fines. See Sections III and IV.
Chronic Effects		
Carcinogenicity		Not determined on the finished product.
Mutagenicity		Not determined on the finished product.
Reproductive Effects		Not determined on the finished product.
Developmental Factors		Not determined on the finished product.

SECTION XII – ECOLOGICAL INFORMATION

NOTE: Ecological data when available is provided for the pure impregnant component knowing that the carbon product contains a lesser percentage.	
Ecotoxicity	Not determined on the finished product. **Potassium Hydroxide:** Mosquito Fish LC_{50} = 80.0 mg/l (24hr)
Persistence/Degradability	Not determined on the finished product.
Bioaccumulation/Accumulation	Not determined on the finished product.
Mobility in Environmental Media	Not determined on the finished product.
Other Adverse Effects	Not determined on the finished product. Impregnant is water soluble, and if wetted, potassium hydroxide could leach and contact surface.

SECTION XIII – DISPOSAL CONSIDERATIONS

Vacuum or shovel material into a closed container. Storage and disposal should be in accordance with applicable local, state and federal laws and regulations. Local regulations may be more stringent than state or federal requirements. Activated Carbon is an adsorbent media; hazard classification is generally determined by the adsorbate that the carbon has picked up. Consult with the US EPA Guidelines listed in 40 CFR Part 261.3 for the classifications of hazardous waste prior to disposal.

SECTION XIV – TRANSPORT INFORMATION

This information as presented below only applies to the material as shipped. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Land	DOT Regulations	UN/NA Identification Number:	STIXNone on finished product.
		UN- Proper Shipping Name:	Not Regulated
		Transport Hazard Class:	None on finished product; See Note 1 below
		Packing Group:	None on finished product
		Marine Pollutant:	None on finished product
	Canadian WHMIS	Hazard Class:	None on finished product. Potassium hydroxide is classified with codes: D1B and E.

Water	IMO / IMDG	UN/NA Identification Number:	STIXNone on finished product
		UN- Proper Shipping Name:	Not Regulated
		Transport Hazard Class:	None on finished product
		Packing Group:	None on finished product
		Marine Pollutant:	None on finished product
Air	ICAO / IATA	UN/NA Identification Number:	STIXNone on finished product
		UN- Proper Shipping Name:	Not Regulated
		Transport Hazard Class:	None on finished product
		Packing Group:	None on finished product
		Marine Pollutant:	None on finished product
		Information reported for product/size: 0.5 Kg	

Note 1: Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, This product has been tested according to the *United Nations Transport of Dangerous Goods* test protocol for a "self-heating substance" (*United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self Heating Substances)* and it has been specifically determined that this product does not meet the definition of a self heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a hazardous material. This information is applicable only for the Activated Carbon Product identified in this document.

SECTION XV – REGULATORY INFORMATION

SARA Title III 302	Product and impregnant component are not subject to SARA Title III, section 302 regulation.	
SARA Title III 313	Product and impregnant component are not subject to SARA Title III, section 313 regulation.	
TSCA	Product and impregnant component are listed.	
California Proposition 65	Product and impregnant component are not listed.	
Canadian Classification	**WHMIS**	Product and impregnant component are listed. Potassium Hydroxide is classified with hazard codes:D1B and E.
	DSL #	Product and impregnant component are listed.
EEC Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.		
Risk and Safety Phrases	R22: Harmful if swallowed. R36: Irritating to eyes. R37: Irritating to respiratory system. R38: Irritating to skin.	
Carbon, activated (CAS: 7440-44-0) is found on the	Canada - British Columbia Occupational Exposure Limits Canada - Yukon Permissible Concentrations for Airborne	

following regulatory lists:	Contaminant Substances Canada Domestic Substances List (DSL) International Air Transport Association (IATA) Dangerous Goods Regulations OECD Representative List of High Production Volume (HPV) Chemicals US - Hawaii Air Contaminant Limits US - Idaho - Toxic and Hazardous Substances - Mineral Dust US - Minnesota Hazardous Substance List US - Minnesota Permissible Exposure Limits (PELs) US - Rhode Island Hazardous Substance List US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants US - Washington Permissible exposure limits of air contaminants US DOE Temporary Emergency Exposure Limits (TEELs) US EPA High Production Volume Program Chemical List US FDA CFSAN Color Additive Status List 4 US FDA CFSAN Color Additive Status List 6

SECTION XVI – OTHER INFORMATION

Intended Use	The material is generally used for treatment of gases and liquids.
The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to determine the suitability and completeness of this information for their particular use.	
While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Calgon Carbon Corporation makes no warranty with respect to same and disclaims all liability for reliance there on.	

Legend:

ACGIH	- American Conference of Governmental Industrial Hygienists
ANSI	- American National Standards Institute
CAS #	- Chemical Abstracts Service Registry Number
CFR	- Code of Federal Regulations
CFSAN	- Center for Food Safety and Applied Nutrition
DOE	- Department of Energy
DOT	- Department of Transportation
DSL	- Domestic Substances List
EEC	- European Economic Community
EPA	- Environmental Protection Agency
FDA	- Food and Drug Administration
GHS	- Globally Harmonized System (of Classification and Labeling of Chemicals)
HMIS	- Hazardous Material Information System
IATA	- International Air Transportation Association
ICAO	- International Civil Aviation Organization
IMO	- International Maritime Organization
IMDG	- International Maritime Dangerous Goods
LD_{50}	- Lethal Dose expected to kill 50% of a group of test animals

LEL	- Lower Explosive Limit
NA	- Not Applicable
NFPA	- National Fire Protection Association
NIOSH	- National Institute for Occupational Safety and Health
OECD	- Organization for Economic Cooperation and Development
OSHA	- Occupational Safety and Health Association
PEL	- Permissible Exposure Limit
SARA	- Superfund Amendments and Reauthorization Act
TLV	- Threshold Limit Value
TSCA	- Toxic Substances Control Act
UEL	- Upper Explosive Limit
WHMIS	- Workplace Hazardous Material Information System

* * * END OF MATERIAL SAFETY DATA SHEET * * *