

ACTIVATED CARBON

Hazard Alert Code:
MODERATE

Chemwatch SDS++

Revision No: 4

Chemwatch 4658-37

Issue Date: 23-Dec-2009

CD 2010/1

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Activated Carbon

STATEMENT OF HAZARDOUS NATURE

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.
CONSIDERED A DANGEROUS SUBSTANCE ACCORDING TO DIRECTIVE 1999/45/EC AND ITS AMENDMENTS.
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

PRODUCT USE

■ Used according to manufacturer's directions. For products 73, 75 and 76.

SUPPLIER

Company: Mars Fishcare Inc

Address:

50 East Hamilton Street

Chalfont

PA, 18914






USA

Telephone: +1 215 822 8181

Fax: +1 215 822 1906

Section 2 - HAZARDS IDENTIFICATION

HAZARD RATINGS

	Min	Max	
Flammability:	1		
Toxicity:	2		
Body Contact:	2		
Reactivity:	1		Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4
Chronic:	2		

GHS Classification

Eye Irritation Category 2B

Respiratory Irritation Category 3



EMERGENCY OVERVIEW

HAZARD

WARNING

Determined by Chemwatch using GHS criteria:

H335 H320

May cause respiratory irritation

Causes eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Response

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Call a POISON CENTER or doctor/physician if you feel unwell.

If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

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EUROPEAN CLASSIFICATION - RISK

Risk Codes

R07

Risk Phrases

- May cause fire.

EUROPEAN CLASSIFICATION - SAFETY

Safety Codes

Safety Phrases

S22

- Do not breathe dust.

S24

- Avoid contact with skin.

S39

- Wear eye/ face protection.

S51

- Use only in well ventilated areas.

S09

- Keep container in a well ventilated place.

S26

- In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Center.

AUSTRALIAN CLASSIFICATION - RISK

Risk Codes

R07

Risk Phrases

- May cause fire.

AUSTRALIAN CLASSIFICATION - SAFETY

Safety Codes

Safety Phrases

S22

Do not breathe dust.

S24

Avoid contact with skin.

S39

Wear eye/face protection.

S51

Use only in well ventilated areas.

S09

Keep container in a well ventilated place.

S26

In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Center.

CANADIAN WHMIS SYMBOLS



Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
carbon, steam activated - not regulated	7440-44-0	100

Section 4 - FIRST AID MEASURES

SWALLOWED

-
- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

- If this product comes in contact with the eyes:
 - Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin or hair contact occurs:
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

-
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.

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- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

- Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

-
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

-
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

-
- Solid which exhibits difficult combustion or is difficult to ignite.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Dry dust can be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
- Build-up of electrostatic charge may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Combustion products include: carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

May emit poisonous fumes.

May emit corrosive fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Gloves:

Respirator:

Chemical goggles.

PVC chemical resistant type.

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

-
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.
- Recover product wherever possible.
- IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal.
- WET: Vacuum/shovel up and place in labelled containers for disposal.
- ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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Limits for Airborne Pollutants	regulated (Carbon black)	3,5	7	
US OSHA Permissible Exposure Levels (PELs) - Table Z1	carbon, steam activated - not regulated (Carbon black)	3.5		
US ACGIH Threshold Limit Values (TLV)	carbon, steam activated - not regulated (Carbon black)	3.5		
Mexico Maximum Permissible Exposure Limits	carbon, steam activated - not regulated (NEGRO DE HUMO (negro de carbón))	3.5	7	
Spain Occupational Exposure Limit for Chemical Agents	carbon, steam activated - not regulated (Carbon black)	3.5		
Malaysia Permissible Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
Philippines Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	- 3.5		
Belgium Occupational Exposure Limits (French)	carbon, steam activated - not regulated (Carbone (noir de))			3,6
Slovak Republic Highest Admissible Exposure Limits - Solid aerosols predominately with nonspecific effect (Slovak)	carbon, steam activated - not regulated (sadze (karcinogén kateg. 1))	2,0		(TWA ((TSH 11)))
Poland Workplace Maximum Allowable Concentration - Dust (Polish)	carbon, steam activated - not regulated (Pyły sadzy technicznej4 - pył całkowity1)	4		
Japan Occupational Exposure Limits for Dusts	carbon, steam activated - not regulated (Carbon black)	4		Total dust**
France Threshold Limit Values for Occupational Exposure - VLE/VME (French)	carbon, steam activated - not regulated (Noir de carbone)	3,5		
Italy Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	carbon, steam activated - not regulated (Carbon black)	3.5		
Canada - Prince Edward Island Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
China Occupational Exposure Limits for Hazardous Agents in the Workplace - Dust	carbon, steam activated - not regulated (炭黑粉尘)	4		G2B
Canada - Nova Scotia Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
New Zealand Workplace Exposure Standards (WES)	carbon, steam activated - not regulated (Carbon black)	3		
US - Idaho - Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		
Taiwan Permissible Concentration of Airborne Harmful Substances	carbon, steam activated - not regulated (Carbon black)	3.5		
US - California Permissible Exposure Limits for Chemical Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		
Singapore Permissible Exposure Limits of Toxic Substances	carbon, steam activated - not regulated (Carbon black)	3.5		
US - Minnesota Permissible Exposure Limits (PELs)	carbon, steam activated - not regulated (Carbon black)	3.5		
Egypt Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon Black)	3.5	7	
Korea (South) Occupational Exposure Standards (Korean)	carbon, steam activated - not regulated (카본블랙)	3.5		
Denmark Limit values for air pollutants (English)	carbon, steam activated - not regulated (Carbon black)	3,5		K
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		

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US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5		
Canada - Alberta Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
Canada - British Columbia Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		2B
Portugal Occupational exposure limits to chemical agents (Portuguese)	carbon, steam activated - not regulated (Carbono, preto (Negro de fumo))	3,5		A4
US NIOSH Recommended Exposure Limits (RELs)	carbon, steam activated - not regulated (Carbon black in presence of polycyclic aromatic hydrocarbons (PAHs))	0.1		
US NIOSH Recommended Exposure Limits (RELs)	carbon, steam activated - not regulated (Carbon black)	3.5		
Australia Exposure Standards	carbon, steam activated - not regulated (Carbon black)	3		
China (Hong Kong) Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
Ireland Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5	7	
Canada - Ontario Occupational Exposure Limits	carbon, steam activated - not regulated (Carbon black)	3.5		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (French)	carbon, steam activated - not regulated (Noir de carbone)	3,5		
Japan Occupational Exposure Limits for Dusts	carbon, steam activated - not regulated (Carbon black)	1		Respirable dust*
Japan Occupational Exposure Limits for Dusts (Japanese)	carbon, steam activated - not regulated (カーボンブラック)	4		総粉塵**
Japan Occupational Exposure Limits for Dusts (Japanese)	carbon, steam activated - not regulated (カーボンブラック)	1		吸入性粉塵*
Greece Occupational Exposure Limits	carbon, steam activated - not regulated (Αιθάλη)	3.5	7	
Finland Occupational Exposure Levels - Concentrations Known to be Harmful (Swedish)	carbon, steam activated - not regulated (Kimrök)	3,5	7	
UK Workplace Exposure Limits (WELs)	carbon, steam activated - not regulated (Carbon black)	3.5	7	
Korea (South) Occupational Exposure Standards (Respirable microdust / Total dust) (Korean)	carbon, steam activated - not regulated (유리규산(SiO2)30%미만의 광물성 분진- 카본블랙)	5		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	carbon, steam activated - not regulated (Carbon black)	- 3.5	- 7	
Spain Occupational Exposure Limit for Chemical Agents (Spanish)	carbon, steam activated - not regulated (Negro de humo)	3,5		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	carbon, steam activated - not regulated (Carbon black)	3.5	7	
US - Washington Permissible exposure limits of air contaminants	carbon, steam activated - not regulated (Carbon black)	3.5	7	
Denmark Limit values for air pollutants (Danish)	carbon, steam activated - not regulated (Carbon black)		3,5	K
Indonesia Threshold Limit Value for chemical substances in the workplace (Bahasa Indonesian)	carbon, steam activated - not regulated (Karbon hitam)	3,5		(TWA (A4))
Denmark Limit values for air pollutants (Danish)	carbon, steam activated - not regulated (Kulstøv, respirabel)		2	
Estonia Limit values for chemical	carbon, steam activated - not			

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hazards in the working environment (English)	regulated (Carbon black)	3	
Denmark List of Limit Values for Dust (Danish)	carbon, steam activated - not regulated (Kulstøv, respirabel)	2	
Canada - Northwest Territories Occupational Exposure Limits (French)	carbon, steam activated - not regulated (Noir de carbone)	3,5	7
US - Alaska Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5	
US - Hawaii Air Contaminant Limits	carbon, steam activated - not regulated (Carbon black)	3.5	7
US - Michigan Exposure Limits for Air Contaminants	carbon, steam activated - not regulated (Carbon black)	3.5	
Canada - Northwest Territories Occupational Exposure Limits (English)	carbon, steam activated - not regulated (Carbon black)	3.5	7
US - Oregon Permissible Exposure Limits (Z1)	carbon, steam activated - not regulated (Carbon black)	3.5	
Japan Occupational Exposure Limits for Dusts	carbon, steam activated - not regulated (Activated charcoal)	0.5	Respirable dust*
Estonia Limit values for chemical hazards in the working environment (English)	carbon, steam activated - not regulated (Carbon dust, carbon black, (except graphite))	3	
Japan Occupational Exposure Limits for Dusts	carbon, steam activated - not regulated (Activated charcoal)	2	Total dust**
Slovak Republic Highest Admissible Exposure Limits - Solid aerosols predominately with fibrogenic effect (Slovak)	carbon, steam activated - not regulated (koks)	2,0	NPELr - pre respirabilnú frakciu 3); Fr ≤ 5 %
Japan Occupational Exposure Limits for Dusts (Japanese)	carbon, steam activated - not regulated (活性炭)	2	総粉塵**
Korea (South) Occupational Exposure Standards (Respirable microdust / Total dust) (Korean)	carbon, steam activated - not regulated (유리규산(SiO2)30%미만의 광물성 분진-활성탄)	5	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	carbon, steam activated - not regulated (Graphite (synthetic))	(See Table 11)	
UK Workplace Exposure Limits (WELs)	carbon, steam activated - not regulated (Graphite inhalable dust)	10	
Japan Occupational Exposure Limits for Dusts (Japanese)	carbon, steam activated - not regulated (活性炭)	0.5	吸入性粉塵*
UK Workplace Exposure Limits (WELs)	carbon, steam activated - not regulated (Graphite respirable)	4	
Slovak Republic Highest Admissible Exposure Limits - Solid aerosols predominately with fibrogenic effect (Slovak)	carbon, steam activated - not regulated (koks)	10,0	NPELc - pre celkovú koncentráciu 2)
US - Minnesota Permissible Exposure Limits (PELs)	carbon, steam activated - not regulated (Graphite, synthetic - Total dust)	10	
Ireland Occupational Exposure Limits	carbon, steam activated - not regulated (Graphite respirable dust)	4	
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	carbon, steam activated - not regulated (Graphite, synthetic - Respirable Fraction)	5	
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	carbon, steam activated - not regulated (Graphite, synthetic - Total dust)	10	
Ireland Occupational Exposure Limits	carbon, steam activated - not regulated (Graphite total inhalable dust)	10	
Czech Republic Occupational Exposure Limits - Dusts predominately with fibrogenic effect	carbon, steam activated - not regulated (koks)	2,0	PELr (mg.m-3) respirabilní frakce (Fr); Fr = 5 %

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(Czech)

Czech Republic Occupational Exposure Limits - Dusts predominately with fibrogenic effect (Czech)	carbon, steam activated - not regulated (koks)	10	PELc (mg.m-3) celková koncentrace
Sweden Occupational Exposure Limit Values and Measures against Air Contaminants (English)	carbon, steam activated - not regulated (Dust carbon (carbon black included))	3	
South Africa Occupational Exposure Limits for Airborne Pollutants	carbon, steam activated - not regulated (Graphite, natural & synthetic - respirable particulate)	5	

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
carbon, steam activated - not regulated	1,750	

MATERIAL DATA

ACTIVATED CARBON:

Not available

CARBON, STEAM ACTIVATED - NOT REGULATED:

■ Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

The TLV-TWA for carbon black is recommended to minimise complaints of excessive dirtiness and applies only to commercially produced carbon blacks or to soots derived from combustion sources containing absorbed polycyclic aromatic hydrocarbons (PAHs). When PAHs are present in carbon black (measured as the cyclohexane-extractable fraction) NIOSH has established a REL-TWA of 0.1 mg/m3 and considers the material to be an occupational carcinogen.

The NIOSH REL-TWA was "selected on the basis of professional judgement rather than on data delineating safe from unsafe concentrations of PAHs".

This limit was justified on the basis of feasibility of measurement and not on a demonstration of its safety.

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans.

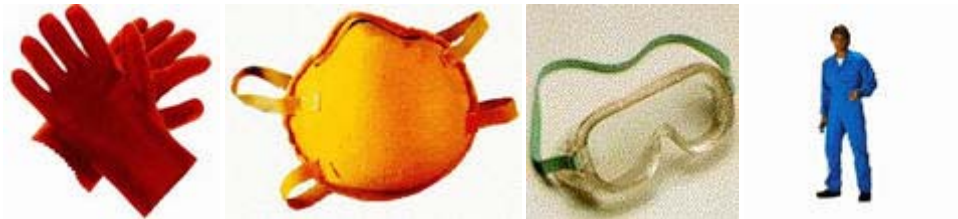
for carbon blacks of mineral origin

TLV TWA: 3.5 mg/m3 A4

ES TWA: 3 mg/m3

Carbon blacks of vegetable origin not listed.

PERSONAL PROTECTION



EYE

-
- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them. DO NOT wear contact lenses.

HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

OTHER

-
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

RESPIRATOR

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Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
10 x PEL	P1 Air-line*	-	PAPR-P1
50 x PEL	Air-line**	-	-
100 x PEL	-	P2 P3 Air-line*	PAPR-P2 -
100+ x PEL	-	Air-line**	- PAPR-P3

* - Negative pressure demand ** - Continuous flow

Explanation of Respirator Codes:

Class 1 low to medium absorption capacity filters.

Class 2 medium absorption capacity filters.

Class 3 high absorption capacity filters.

PAPR Powered Air Purifying Respirator (positive pressure) cartridge.

Type A for use against certain organic gases and vapors.

Type AX for use against low boiling point organic compounds (less than 65°C).

Type B for use against certain inorganic gases and other acid gases and vapors.

Type E for use against sulfur dioxide and other acid gases and vapors.

Type K for use against ammonia and organic ammonia derivatives

Class P1 intended for use against mechanically generated particulates of sizes most commonly encountered in industry, e.g. asbestos, silica.

Class P2 intended for use against both mechanically and thermally generated particulates, e.g. metal fume.

Class P3 intended for use against all particulates containing highly toxic materials, e.g. beryllium.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - (a): particle dust respirators, if necessary, combined with an absorption cartridge;
 - (b): filter respirators with absorption cartridge or canister of the right type;
 - (c): fresh-air hoods or masks
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:	Air Speed:
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favorable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Black granules of powder with no odour; insoluble in water.

PHYSICAL PROPERTIES

Does not mix with water.

Floats on water.

State	Divided Solid	Molecular Weight	Not Applicable
Melting Range	Not	Viscosity	Not

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(°C)	Available		Applicable
Boiling Range (°C)	Not Applicable	Solubility in water (g/L)	Immiscible
Flash Point (°C)	Not Applicable	pH (1% solution)	Not Applicable
Decomposition Temp (°C)	Not Available	pH (as supplied)	Not Applicable
Autoignition Temp (°C)	Not Applicable	Vapor Pressure (kPa)	Not Applicable
Upper Explosive Limit (%)	Not Applicable	Specific Gravity (water=1)	0.25 - 0.60
Lower Explosive Limit (%)	Not Applicable	Relative Vapor Density (air=1)	Not Applicable
Volatile Component (%vol)	Not Applicable	Evaporation Rate	Not Applicable

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

-
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerization will not occur.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material has NOT been classified as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality (death) rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, unintentional ingestion is not thought to be cause for concern.

EYE

■ There is some evidence to suggest that this material can cause eye irritation and damage in some persons.

SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual. Effects on lungs are significantly enhanced in the presence of respirable particles.

CHRONIC HEALTH EFFECTS

■ Overexposure to respirable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity, chest infections

Repeated exposures, in an occupational setting, to high levels of fine-divided dusts may produce a condition known as pneumoconiosis which is the lodgement of any inhaled dusts in the lung irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50,000 inch), are present. Lung shadows are seen in the X-ray. Symptoms of pneumoconiosis may include a progressive dry cough, shortness of breath on exertion (exertional dyspnea), increased chest expansion, weakness and weight loss. As the disease progresses the cough produces a stringy mucous, vital capacity decreases further and shortness of breath becomes more severe. Other signs or symptoms include altered breath sounds, diminished lung capacity, diminished oxygen uptake during exercise, emphysema and pneumothorax (air in lung cavity) as a rare complication.

Removing workers from possibility of further exposure to dust generally leads to halting the progress of the lung abnormalities. Where worker-exposure potential is high, periodic examinations with emphasis on lung dysfunctions should be undertaken

Dust inhalation over an extended number of years may produce pneumoconiosis. Pneumoconiosis is the accumulation of dusts in the lungs and the tissue reaction in its presence. It is further classified as being of noncollagenous or collagenous types. Noncollagenous pneumoconiosis, the benign form, is

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identified by minimal stromal reaction, consists mainly of reticulin fibres, an intact alveolar architecture and is potentially reversible. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

There is insufficient evidence to suggest that exposure to carbon black causes increased susceptibility to cancer or other ill effects. Some lung changes can occur after a prolonged period of exposure as well as increased strain on the right side of the heart.

TOXICITY AND IRRITATION

■ Not available. Refer to individual constituents.

CARBON, STEAM ACTIVATED - NOT REGULATED:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

■ No data of toxicological significance identified in literature search.

CARCINOGEN

Carbon black International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs

Group 2B

Section 12 - ECOLOGICAL INFORMATION

Refer to data for ingredients, which follows:

CARBON, STEAM ACTIVATED - NOT REGULATED:

ACTIVATED CARBON:

■ DO NOT discharge into sewer or waterways.

ACTIVATED CARBON:

CARBON, STEAM ACTIVATED - NOT REGULATED:

Section 13 - DISPOSAL CONSIDERATIONS

-
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: Burial in a licensed land-fill or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

Regulations for ingredients

carbon, steam activated - not regulated (CAS: 7440-44-0) is found on the following regulatory lists;

"Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines", "Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances", "Canada Domestic Substances List (DSL)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (French)", "China Dangerous Chemicals Names List", "China Hygienic Standards for Uses of Food Additives (GB 2760-1996) - List of Processing Assistants Recommended for Use in Food Industry", "China Inventory of Existing Chemical Substances", "Czech Republic Occupational Exposure Limits - Dusts predominately with fibrogenic effect (Czech)", "Estonia Limit values for chemical hazards in the working environment (English)", "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)", "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (French)", "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (German)", "European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (Spanish)", "International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List", "Ireland Occupational Exposure Limits", "Japan Occupational Exposure Limits for Dusts", "Japan Occupational Exposure Limits for Dusts (Japanese)", "Korea (South) Existing Chemicals List (KECL)", "Korea (South) Occupational Exposure Standards (Respirable microdust / Total dust) (Korean)", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data", "New Zealand Hazardous Substances and New Organisms (HSNO) Act - Dangerous Goods", "New Zealand Inventory of Chemicals (NZIoC)", "Nordic Food Additive Database", "OECD Representative List of High Production Volume (HPV) Chemicals", "Philippines Inventory of Chemicals and Chemical Substances (PICCS)", "Slovak Republic Highest Admissible Exposure Limits - Solid aerosols predominately with fibrogenic effect (Slovak)", "South Africa Occupational Exposure Limits for Airborne Pollutants", "Sweden Occupational Exposure Limit Values and Measures against Air Contaminants (English)", "UK Workplace Exposure Limits (WELs)", "US - Idaho - Toxic and Hazardous Substances - Mineral Dust", "US - Minnesota Hazardous Substance List", "US - Minnesota Permissible Exposure Limits (PELs)", "US - Pennsylvania - Hazardous Substance List", "US - Rhode Island Hazardous Substance List", "US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for 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", "US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide", "US Toxic Substances Control Act (TSCA) - Inventory", "US TSCA Section 8 (a) Inventory Update Rule (IUR) - Partial Exemptions"

No data for Activated Carbon (CW: 4658-37)

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Section 16 - OTHER INFORMATION

EXPOSURE STANDARD FOR MIXTURES

■ "Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration: ■ Composite Exposure Standard for Mixture (TWA) :3 mg/m³. ■ Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone. If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed. Component Breathing Zone ppm Breathing Zone mg/m³ Mixture Conc (%).

Component	Breathing zone (ppm)	Breathing zone (mg/m ³)
Mixture Conc (%)	carbon, steam activated -	not reg
3.0000	100.0	

■ Classification of the mixture and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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