SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Rema Filter
SYNONYMS: Similar older variants may also be known by Garfil, Liquifil and Odasorb
PRODUCT CODES: RF120C, RF230C, RF420C, RFxxxC
MANUFACTURER: British Rema Processing Limited
DIVISION: Rema Filtration
ADDRESS: Image Works, Foxwood Close, Chesterfield. S41 9RN. United Kingdom
EMERGENCY PHONE: +44 (0)7896 998983
CHEMTREC PHONE: 01246 263851
FAX PHONE: 01246 269955
CHEMICAL NAME: Cellulose impregnated with activated carbon
CHEMICAL FAMILY: Cellulose
CHEMICAL FORMULA: \((\text{C}_6\text{H}_{10}\text{O}_5)^n\)
PRODUCT USE: Gaseous and liquid filtration
PREPARED BY: Dr. R. A. Mellor

SECTION 1 NOTES:

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>CAS NO</th>
<th>% WT</th>
<th>% VOL</th>
<th>SARA 313 REPORTABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellulose</td>
<td>9004-34-6</td>
<td>&gt;50%</td>
<td>&gt;70%</td>
<td>No</td>
</tr>
<tr>
<td>Activated carbon</td>
<td>7440-44-0</td>
<td>&gt;30%</td>
<td>&lt;20%</td>
<td>No</td>
</tr>
</tbody>
</table>

This material is comprised of Cellulose and Activated Carbon. There are no established PEL, TWA, or TLV values for this material. Caution should be taken for a respirable dust. The ACGIH TWA for respirable dust is 2.5 mg/m3.

SECTION 2 NOTES:

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
This material is non-toxic through ingestion. This material is non-toxic through skin absorption. Activated carbon is not a primary skin irritant. Cellulose fibres may cause some irritation if the material is cut. No sensitization effects are known. The physical nature of this product may irritate the respiratory system or eyes if the material cut or broken up into fibres.

ACUTE HEALTH HAZARDS: None known
CHRONIC HEALTH HAZARDS: None known
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None

CARCINOGENICITY
None

SECTION 3 NOTES:

Care must be taken to ensure that the information contained in this MSDS relates to the material before it has been used. Since activated carbon and cellulose can both retain amounts of any material they have come into contact with, materials that may be otherwise injurious to health, operators and their associated companies must also be cognisent of the MSDS’s for contaminants that may still be present within the material after use.
SECTION 4: FIRST AID MEASURES

EYES: In the event of contact with the material, flush with water for 15 minutes and consult medical advice.

SKIN: In the unlikely event that irritation occurs, re-evaluate handling procedures and effectiveness of PPE

INGESTION: Not hazardous by ingestion

INHALATION: In the case of inhalation remove to fresh air. Treat any released particulates as nuisance dust.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Before use material has no known physical effects. After use in a process, treat symptomatically and in accordance with details of MSDS of adsorbed / absorbed species

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

NFPA HAZARD CLASSIFICATION
HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 1 OTHER: 0

EXTINGUISHING MEDIA: Water, powder, carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS DECOMPOSITION PRODUCTS: May produce carbon monoxide

SECTION 5 NOTES:

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Contain spilled material and dispose of appropriately

SECTION 6 NOTES:

As with all filter material, the material may have come into contact with products that could be injurious to health. Used material should be treated as hazardous until such time as it can be shown to be otherwise.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: None

OTHER PRECAUTIONS: Avoid contact with strong oxidisers. Avoid generating dust

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

VENTILATION: Ensure local exhaust ventilation in areas where cutting or forming may cause dust

RESPIRATORY PROTECTION: A nuisance mask may be required if process causes formation of dust

EYE PROTECTION: As with any industrial process, safety glasses are always recommended

SKIN PROTECTION: Recommended

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: process dependent
WORK HYGIENIC PRACTICES: As always ensure good practice and wash hands after handling.

EXPOSURE GUIDELINES: Treat any airbourne particulates as a nuisance dust

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Filter material, grey to black in colour

ODOR: None likely, a slight ester smell may be detected when heating

PHYSICAL STATE: Solid

pH AS SUPPLIED: Wash water should give a pH in the 5 to 8 range as supplied
pH (Other):

BOILING POINT: Decomposes

F: C:

MELTING POINT: Not Applicable

F: C:

FREEZING POINT: Not Applicable

F: C:

VAPOR PRESSURE (mmHg): Not Applicable

@ F: C:

VAPOR DENSITY (AIR = 1): Not Applicable

@ F: C:

SPECIFIC GRAVITY (H2O = 1): Varies by product

@ F: C:

EVAPORATION RATE: Will not evaporate

BASIS (=1):

SOLUBILITY IN WATER: Insoluble

PERCENT SOLIDS BY WEIGHT: >95% as supplied

PERCENT VOLATILE: contains <5% as supplied as water

F: C:

VOLATILE ORGANIC COMPOUNDS (VOC): None as supplied

WITH WATER: LBS/GAL

WITHOUT WATER: LBS/GAL

MOLECULAR WEIGHT:

VISCOITY:

@ F: C:

SECTION 9 NOTES:
SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID (STABILITY): Excess heat

INCOMPATIBILITY (MATERIAL TO AVOID): Oxidising agents, fluorine

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None (as supplied)

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID (POLYMERIZATION): None

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Cellulose

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): >5000 mg/kg [Rat]. Acute dermal toxicity (LD50): >2000 mg/kg [Rabbit]. Acute toxicity of the dust (LC50): 5800 mg/m 4 hours [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:

Slightly hazardous in case of ingestion, of inhalation. Non-irritant for skin.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:

SECTION 11 NOTES:

Acute Potential Health Effects: Skin: It is not known to cause skin irritation. Ingestion: Ingestion of large amounts of cellulose may cause digestive tract irritation. Eyes: Dust may cause mechanical irritation. To the best of our knowledge, there are no known cases of adverse effects or disease in humans from exposure to cellulose. Health effects from cotton fibers, wood, flax, jute, and hemp are usually due to other substances. Purified cellulose is known to be essentially inert. Pure cellulose dust is not known to be irritating or toxic. Chronic Potential Health Effects: Chronic inhalation from cellulose-containing fibers can cause byssinosis. Allergies can develop to cellulose-containing fibers, but these are probably due to plant proteins or other components. In chronic feeding studies with purified cellulose in mice and rats, no significant adverse reactions were seen.

Activated Carbon

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available. LC50: Not available.

Chronic Effects on Humans:

Causes damage to the following organs: mucus membranes. May cause damage to the following organs: lungs.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Unlikely to cause adverse reproductive effects.

Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. Inhalation: May cause respiratory tract irritation. Ingestion: May cause aspiration pneumonitis, vomiting, decreased gastrointestinal transit time, gastrointestinal obstruction, constipation, a charcoal-containing empyema, intestinal perforation, charcoal deposits in the esophageal and gastric mucosa, rectal ulcer. Chronic Potential Health Effects: Skin: Chronic skin exposure can result in clogging of hair follicles, rendering them black. Inhalation: Chronic inhalation can cause carbon particles to accumulate in the lungs. It may cause a pneumoconiosis called “Black Lung Disease” or “Coal Workers Pneumoconiosis”. This is seen in coal workers, but no evidence has been found for the equivalent with occupational exposure to activated carbon (charcoal).
SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:

Ecotoxicity: Not available.
BOD₅ and COD: Not available.
Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. The product itself and its products of degradation are not toxic.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Dispose of in accordance with local, state or federal regulations. Users should be aware that this material may adsorb other components in use, and may be contaminated with significant fractions of these at the time of disposal.

RCRA HAZARD CLASS:

Not regulated. However if the material has been used to remove regulated or restricted compounds then the appropriate regulations must be followed.

SECTION 14: TRANSPORT INFORMATION

No transport restrictions apply

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

SECTION 15: REGULATORY INFORMATION

Other Regulations: EINECS: This product’s components are on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC): This product is not classified according to the EU regulations. Not applicable.

HMIS (U.S.A.):

Health Hazard: 1
Fire Hazard: 1
Reactivity: 0

Personal Protection: B

National Fire Protection Association (U.S.A.):

Health: 1
Flammability: 1
Reactivity: 0
Specific hazard:
Protective Equipment:
Gloves (impervious). Lab coat. Not applicable. Safety glasses.

SECTION 16: OTHER INFORMATION

CREATED: 1st June 2013 LAST UPDATE: 1st June 2013

DISCLAIMER:

The information herein is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Rema Filtration be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Rema Filtration has been advised of the possibility of such damages.