



Safety Data Sheet

Seal Bond MA-252

Revision Date: November 16, 2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MA-252 PART A
PRODUCT CODES: MA-252 PART A

MANUFACTURER: Seal Bond
STREET ADDRESS: 14851 Michael Lane
CITY, STATE, ZIP: Spring Lake, MI 49456

INFORMATION PHONE: 616-850-0507
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 616-850-0530

PREPARED BY: Kelly Barnes

Chemical Name or Class: Vegetable oil/sulfonic ester mixture

SECTION 2. HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Serious eye irritation category 2B
Label Elements: None
GHS Label Elements and Precautionary Statements:
Hazard Statements:
Warning: Causes eye irritation
Precautionary statements:
P102 Keep out of reach of children.
P103 Read label before use
P264 Wash skin thoroughly after handling.
Response:

P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 IF eye irritation persists: Get medical advice/attention

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0 PERSONAL PROTECTIVE EQUIPMENT: B

POTENTIAL HEALTH EFFECTS

EYES:

MATERIAL OR HIGH VAPOR CONCENTRATION CAN CAUSE IRRITATION TO THE EYES.

SKIN:

CAN CAUSE IRRITATION TO SKIN.

INGESTION:

LIQUID CAN CAUSE IRRITATION TO THE MUCOUS MEMBRANES IF SWALLOWED.

INHALATION:

HIGH VAPOR CONCENTRATION CAN CAUSE IRRITATION TO THE RESPIRATORY TRACT.

HEALTH HAZARDS (ACUTE AND CHRONIC):

PROLONGED OR REPEATED EXPOSURE MAY CAUSE ASTHMA AND SKIN SENSITIZATION OR OTHER ALLERGIC RESPONSES.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: NO

ADDITIONAL CARCINOGENICITY INFORMATION:

NONE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
Vegetable oil	8001-79-4	none	none	none	30-60
Water	7732-18-5	none	none	none	30-60
Aromatic sulfonic ester	trade secret	none	none	none	1-5
Sorbitan laurate	trade secret	none	none	none	1-5

SECTION 3 NOTES: NO TOXIC CHEMICAL(S) SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III AND OF 40 CFR 372 ARE PRESENT.

Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4. FIRST AID MEASURES

EYES:

IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST FIFTEEN MINUTES WHILE LIFTING UPPER AND LOWER LIDS. GET IMMEDIATE MEDICAL ATTENTION.

SKIN:

FLUSH SKIN WITH WATER FOR AT LEAST 15 MINUTES AND REMOVE ALL CONTAMINATED CLOTHING IMMEDIATELY. GET MEDICAL ATTENTION IF REDDENING OR SWELLING OCCURS.

INGESTION:

DO NOT INDUCE VOMITTING. INGESTION OR VOMITING MAY CAUSE ASPIRATION INTO THE LUNGS RESULTING IN CHEMICAL PNEUMONITIS.

INHALATION:

REMOVE VICTIM TO FRESH AIR IF EFFECTS PERSIST AND ADMINISTER OXYGEN IF NECESSARY.

SECTION 5. FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: not available
(% by volume) LOWER: not available

FLASH POINT: 200+F

METHOD USED:

SETA FLASH

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

SPECIAL FIRE FIGHTING PROCEDURES:

TOXIC FUMES WILL BE EVOLVED WHEN THIS MATERIAL IS INVOLVED IN A FIRE. A SELF CONTAINED BREATHING APPARATUS SHOULD BE AVAILABLE FOR FIRE FIGHTERS. COOL ALL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NONE KNOWN.

SECTION 6. RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

AVOID CONTACT WITH MATERIAL. WEAR THE APPROPRIATE SAFETY EQUIPMENT. STOP SPILL AT SOURCE, DYKE AREA TO PREVENT SPREADING. PUMP LIQUID TO SALVAGE TANK. TAKE UP THE REMAINDER WITH AN ABSORBENT SUCH AS CLAY AND PLACE IN DISPOSAL CONTAINERS.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

AVOID ALL SKIN CONTACT. AVOID BREATHING VAPORS. RESEAL PARTIALLY USED CONTAINERS. PROPERLY LABEL ALL CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING, OR USING TOILET FACILITIES. OBSERVE GOOD INDUSTRIAL HYGIENE AND SAFE WORKING PRACTICES.

OTHER PRECAUTIONS:

MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS, THEREFORE, READ THE MSDS OF ALL COMPONENTS TO BECOME FAMILIAR WITH ALL HAZARDS PRIOR TO USING THIS PRODUCT.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

NONE REQUIRED UNDER NORMAL CONDITIONS OF USE. NIOSH APPROVED AIR-SUPPLIED RESPIRATOR DURING THE CLEANING, HIGH TEMPERATURE PROCESSING OR WHEN THERMAL DECOMPOSITION IS SUSPECTED.

VENTILATION:

AVOID BREATHING VAPORS. VENTILATION MUST BE SUFFICIENT TO CONTROL VAPORS

PROTECTIVE GLOVES:

IMPERVIOUS GLOVES – NEOPRENE OR RUBBER

EYE PROTECTION:

SPLASH PROOF GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

CLEAN BODY COVERING CLOTHING AS WELL AS APRON, FOOTWEAR EQUIPMENT SHOULD BE USED AS DEEMED NECESSARY TO AVOID CONTACT WITH THE MATERIAL.

WORK HYGIENIC PRACTICES:

OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

SEE SECTION THREE FOR OCCPATONAL EXPOSURE LIMIT VALUES.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: low viscosity liquid – milky white color – NEGLIGIBLE ODOR

BOILING POINT OR RANGE: N/A

VAPOR DENSITY (AIR = 1): N/A

SPECIFIC GRAVITY (H₂O = 1): 1.0

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: emulsifiable

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10. STABILITY AND REACTIVITY

STABILITY:

STABLE CONDITIONS TO AVOID (STABILITY):

AVOID CONTACT WITH OPEN FLAMES AND ALL SOURCES OF IGNITIONS AND SPARKS. Protect from freezing.

INCOMPATIBILITY (MATERIAL TO AVOID):

AVOID CONTACT WITH STRONG OXIDIZING AGENTS OR MATERIALS.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

CARBON MONOXIDE, CARBON DIOXIDE AND NITROGEN COMPOUNDS.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

SECTION 11. TOXICOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Vegetable Oil CAS#8001-79-4: Toxicity Data: Skin irritation Human, Patch Test, Exposure Time: 48 h, Mild. skin irritation rabbit, Mild skin irritation. Eye irritation rabbit, Draize, Exposure Time: 24 h, Slightly irritating. Repeated dose toxicity 13 weeks, oral: NOAEL: 10 %, (Rat, Male/Female, daily). 13 weeks, oral: NOAEL: 10 %, (mouse, Male/Female, daily). Mutagenicity Genetic Toxicity in Vitro: Ames: Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic Activation: with/without). Genetic Toxicity in Vivo: Micronucleus Assay: (mouse, Male/Female, oral) negative.

SECTION 12. ECOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Vegetable Oil CAS#8001-79-4: Biodegradation > 60 %, Acute and Prolonged Toxicity to Fish LC50: > 1,000 mg/l (Zebra fish (Brachydanio rerio), 96 h). Toxicity to Microorganisms EC10: 54,000 mg/l, (Pseudomonas putida)

SECTION 13. WASTE DISPOSAL

WASTE DISPOSAL METHOD:.

DISPOSE OF THE MATERIAL IN A WASTE DISPOSAL SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAW.

SECTION 14. Transport Information

DOT: Not Regulated

IMO/IMDG: Not Regulated

SECTION 15. REGULATORY INFORMATION

No data for the product itself.

Component data:

Component(s) Vegetable Oil CAS# 8001-79-4, Water CAS# 7732-18-5, Aromatic Sulfonic Ester CAS# is a trade secret, and Sorbitan laurate CAS# is a trade secret: United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous. US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302): Components None

SARA Section 311/312 Hazard Categories: Acute Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): Components None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) -

Supplier Notification Required: Components None US. EPA

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state. Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Weight percent Components CAS-No.

40 - 50% Vegetable Oil CAS# 8001-79-4

>=1% Water CAS# 7732-18-5

>=1% Aromatic Sulfonic Ester CAS# is a trade secret

>=1% Sorbitan laurate CAS# is a trade secret

California Prop. 65: To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

SECTION 16. OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation



14851 Michael Lane, Spring Lake, MI 49456 USA

Safety Data Sheet

Seal Bond MA-252

Revision Date: November 16, 2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MA-252 PART B
PRODUCT CODES: MA-252 PART B

MANUFACTURER: Seal Bond
STREET ADDRESS: 14851 Michael Lane
CITY, STATE, ZIP: Spring Lake, MI 49456

INFORMATION PHONE: 616-850-0507
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 616-850-0530

PREPARED BY: Kelly Barnes

Chemical Name or Class: MDI isocyanate

SECTION 2. HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Respiratory sensitizer category 1B, Skin corrosion/irritation category 2, skin sensitizer category 1B, Serious eye irritation category 2B, Acute toxicity inhalation category 4, Specific target organ toxicity single exposure category 3, Long term hazard to aquatic environment category 4

GHS Label Elements and Precautionary Statements:



Label Elements:

Hazard Statements:

Danger: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Warning: Causes skin irritation
Warning: May cause an allergic skin reaction
Warning: Causes eye irritation
Warning: May be harmful if inhaled
Warning: May cause respiratory irritation.
May cause long lasting harmful effects to aquatic life
Precautionary statements:

P102 Keep out of reach of children.

P103 Read label before use

P261 Avoid breathing dust/fume/gas/mist/vapours/spray

P284 Wear respiratory protection

P280 Wear protective gloves/protective clothing/eye protection/face protection

P272 Contaminated work clothing should not be allowed out of the workplace.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area

Response

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P342 + P311 IF experiencing respiratory symptoms: call a POISON CENTER or doctor/physician.

P302 + P352 IF ON SKIN: wash with plenty of soap and water.

P333 + P313 IF SKIN irritation or rash occurs: Get medical advice/attention.

P362 + P364 take off contaminated clothing and wash it before reuse

P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 IF eye irritation persists: Get medical advice/attention.

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

Storage:

P405 Store locked up.

P403 + P233 Store in a well-ventilated place. Keep container tightly closed

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 2 FLAMMABILITY: 1 REACTIVITY: 1 PERSONAL PROTECTIVE EQUIPMENT: G

POTENTIAL HEALTH EFFECTS

EYES:

MAY CAUSE IRRITATION.

SKIN:

MAY CAUSE IRRITATION OR ALLERGIC SKIN RESPONSE. SKIN CONTACT MAY CAUSE SENSITIZATION.

INGESTION:

THIS MATERIAL HAS A PROBABLE LOW ACUTE ORAL TOXICITY. Slightly hazardous.

INHALATION:

EXPOSURE MAY INCLUDE IRRITATION TO THE NOSE, THROAT AND LUNGS AND RESPIRATORY SYSTEM, POSSIBLY COMBINED WITH DRYNESS OF THE THROAT OR CHEST AND DIFFICULTY IN BREATHING. SYMPTOMS MAY BE DELAYED. A REACTIVE RESPONSE TO MDI MAY DEVELOP IN SENSITIZED PERSONS.

HEALTH HAZARDS (ACUTE AND CHRONIC):

THERE ARE REPORTS THAT CHRONIC EXPOSURE MAY RESULT IN PERMANENT DECREASE IN LUNG FUNCTION. SINGLE OR REPEATED SKIN CONTACT OR INHALATION MAY CAUSE SENSITIZATION OR ALLERGIC REACTION. PERSONS WITH ASTHMATIC-TYPE CONDITIONS, CHRONIC BRONCHITIS, OTHER CHRONIC RESPIRATORY DISEASES OR RECURRENT SKIN ECZEMA OR SENSITIZATION SHOULD BE EXCLUDED FROM CONTACT TO MATERIALS OR WORKING WITH THIS PRODUCTS.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS.

CARCINOGENICITY

OSHA: NO NTP: NO IARC: yes

Component Methylenediphenyldiisocyanate, isomers and homologues: IARC group 3, Component Diphenylmethane 4,4'-diisocyanate: IARC group 3

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
-------------------	----------------	-----------------	------------------	------------------	-----------------

Methylenediphenyldiisocyanate, isomers and homologues					
-------------------------------------------------------	--	--	--	--	--

	9016-87-9	NONE	NONE	NONE	30-60
* Diphenylmethane 4,4'diisocyanate					
	101-68-8	0.2 mg/m3	0.05mg/m3	0.05 mg/m3	30-60
Reaction Products of isocyanic acid, polymethylenepolyphenylene ester and poly (oxy-1,2-ethanediy), alpha-methyl-omega, hydroxyl-	70644-56-3	NONE	NONE	NONE	3-7
PROPYLENE CARBONATE	108-32-7	none	none	none	5-10

SECTION 3 NOTES:

toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.

Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4. FIRST AID MEASURES

EYES:

FLUSH EYES WITH WATER FOR AT LEAST FIFTEEN MINUTES. GET IMMEDIATE MEDICAL ASSISTANCE.

SKIN:

SKIN CONTACT WILL NORMALLY CAUSE NO MORE THAN IRRITATION BUT WASH AFFECTED AREA WITH SOAP AND WATER OR A POLYGLYCOL BASED SKIN CLEANSER AND REMOVE CONTAMINATED CLOTHING PROMPTLY.

INGESTION:

DO NOT INDUCE VOMITING. WASH OUT MOUTH WITH WATER. MOVE EXPOSED PERSON TO FRESH AIR AREA. GET MEDICAL ATTENTION IMMEDIATELY IF SYMPTOMS OCCUR.

INHALATION:

REMOVE VICTIM TO FRESH AIR AND ADMINISTER OXYGEN IF NECESSARY. OBTAIN MEDICAL ASSISTANCE. TREATMENT IS SYMPTOMATIC FOR PRIMARY IRRITATION OR BRONCHOSPASM.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

FOR SEVERE EXPOSURE, MEDICAL FOLLOW-UP SHOULD BE MONITORED FOR AT LEAST 48 HOURS.

SECTION 5. FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR,
(% by volume)

UPPER: not available
LOWER: not available

FLASH POINT: 200+F

METHOD USED:

SETA FLASH

EXTINGUISHING MEDIA:

FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, USE WATER SPRAY, FOG OR FOAM,; DO NOT USE WATER JET.

SPECIAL FIRE FIGHTING PROCEDURES:

USE FULL BUNKER GEAR INCLUDING A POSITIVE PRESSURE SELF-CONTAINED BREATHING APPARATUS. CONTAINERS MAY BURST UNDER INTENSE HEAT. IF WATER IS USED, VERY LARGE AMOUNTS ARE REQUIRED. REACTION BETWEEN WATER AND ISOCYANATE MAY BE VIGOROUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NO UNUSUAL FIRE HAZARDS KNOW OTHER THEN REACTION TO WATER CAN BE VIGOROUS.

ADDITIONAL CARCINOGENICITY INFORMATION:

NO LISTED INGREDIENTS OF THIS PRODUCT ARE REGULATED AS CARCINOGENS.

SECTION 6. RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

WEAR RESPIRATOR AND PROTECTIVE CLOTHING, SHUT OFF THE SOURCE AT THE LEAK. REMOVE EXCESS WITH VACUUM TRUCK AND TAKE UP THE REMAINDER WITH AN ABSORBENT SUCH AS CLAY AND PLACE IN DISPOSAL CONTAINERS. FLUSH AREA WITH A LIQUID DECONTAMINANT. FOR LARGE SPILLS, EVACUATE THE AREA AND TEST ATMOSHERE FOR MDI

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

STORE IN A COOL DRY PLACE. SEAL ALL PARTIALLY USED CONTAINERS. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. MIXED MATERIALS CONTAIN THE HAZARDS OF ALL THE COMPONENTS; THEREFORE, READ THE MSDS'S OF ALL THE COMPONENTS PRIOR TO USING MATERIAL. PROPERLY LABEL ALL CONTAINERS. STORE MATERIAL BETWEEN 60-100 F AND KEEP DRY.

OTHER PRECAUTIONS:

AVOID ALL SKIN CONTACT. AVOID BREATHING VAPORS GENERATED FROM THE MATERIAL. OBSERVE CONDITIONS OF GOOD GENERAL HYGIENE AND SAFE WORKING PRACTICES. CONTAMINATED LEATHER ARTICLES CAN NOT BE CLEANED AND MUST BE DISCARDED IF CONTAMINATED WITH THIS PRODUCT. WASH ALL CONTAMINATED CLOTHING PRIOR TO THE REUSE THEREOF.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

USE A NIOSH APPROVED PRESSURE AIR-SUPPLIED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO VAPOR IN ACCORDANCE WITH 29 CFR 1910.134. CARTRIDGE TYPE RESPIRATORS ARE NOT APPROVED FOR PROTECTION AGAINST DIISOCYANATES.

VENTILATION:

GENERAL EXHAUST IS USUALLY SUFFICIENT TO CONTROL VAPORS AND EXPOSURE HAZARDS. HOWEVER, AREA SHOULD BE MONITORED TO PREVENT EXPOSURE BEYOND THE RECOMMENDED OSHA, ACGIH LIMITS.

PROTECTIVE GLOVES:

IMPERVIOUS GLOVES – NEOPRENE OR RUBBER

EYE PROTECTION:

SPLASH GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

WEAR BODY COVERING CLOTHING AND OTHER COVERINGS AS NECESSARY SUCH AS APRON AND APPROPRIATE FOOTWEAR TO AVOID CONTACT WITH MATERIAL.

WORK HYGIENIC PRACTICES:

OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

SEE SECTION THREE FOR OCCPATONAL EXPOSURE LIMIT VALUES.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: MEDIUM VISCOSITY LIQUID – amber brown

BOILING POINT OR RANGE: N/A

VAPOR DENSITY (AIR = 1): N/A

SPECIFIC GRAVITY (H₂O = 1): 1.2

EVAPORATION RATE: N/A

SOLUBILITY IN WATER: EMULSIFIABLE

Odor Threshold: N/A

pH: N/A

Melting point/freezing point: N/A

Vapor Pressure: N/A

Auto Ignition Temperature: N/A

Partition Coefficient: n-octanol/water: N/A

Decomposition Temperature: N/A

SECTION 10. STABILITY AND REACTIVITY

STABILITY:

STABLE AT ROOM TEMPERATURE

CONDITIONS TO AVOID (STABILITY):

AVOID EXCESSIVE HEAT, OPEN FLAMES. DUE TO REACTION WITH WATER, A HAZARDOUS BUILDUP OF PRESSURE COULD RESULT.

INCOMPATIBILITY (MATERIAL TO AVOID):

CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS AND STRONG LEWIS ACIDS OR MINERAL ACIDS, ALCOHOLS, BASES AND WATER.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:

CO, CO₂, NITROGEN OXIDES, HYDROCARBONS AND HCN

HAZARDOUS POLYMERIZATION:

POLYMERIZATION MAY OCCUR AT ELEVATED TEMPERATURES IN THE PRESENCE OF ALKALIES, TERTIARY AMINES AND METAL COMPOUNDS.

SECTION 11. TOXICOLOGICAL INFORMATION

Potential acute health effects:

Inhalation : May cause sensitization by inhalation.

Ingestion : Low oral toxicity. Ingestion may cause irritation of the gastrointestinal tract.

Skin : Irritating to skin. May cause sensitisation by skin contact

Eyes : Irritating to eyes.

Acute toxicity:

Component Diphenylmethanediiisocyanate, isomers and homologues: LD50 Dermal Rabbit - Male, Female >9400 mg/kg

LD50 Oral Rat - Male >10000 mg/kg

LC50 InhalationDusts and mists: Rat - Male, Female = 310 mg/m³ (4 hour exposure)

Component Diphenylmethane 4,4'- diisocyanate LD50 Dermal Rabbit - Male, Female >9400 mg/kg

LD50 Dermal Rabbit >5000 mg/kg

LD50 Rabbit – male = 100mg/kg

Intraperitoneal:

LD50 Oral Rat - Male >10000 mg/kg and LD50 Oral Rat - Male, Female >2000 mg/kg

LC50 Inhalation Dusts and mists: Rat - Male, Female >2.24 mg/L (1 hour exposure)

Chronic toxicity:

Component Methylenediphenyldiisocyanate, isomers and homologues: Chronic NOECInhalation Dusts and mists: Rat - Male, Female = 0.2 mg/m³ (2 years; 5 days

per week)

IRRITATION/CORROSION:

Component Methylenediphenyldiisocyanate, isomers and homologues: Mild skin irritant (rabbit), Non-irritant to eyes (rabbit)

Component Diphenylmethane 4,4'- diisocyanate: skin irritant (rabbit), irritating to eyes

Component Isocyanic acid, polymethylenepolyphenylene ester: Irritating to skin. Irritating to eyes.

Sensitizer

Component Methylenediphenyldiisocyanate, isomers and homologues: Skin – Mouse, Sensitizing. Respiratory - Guinea pig, Sensitizing

Component Diphenylmethane 4,4'-diisocyanate: skin – Mouse, Sensitizing. Respiratory - Guinea pig, Sensitizing

Carcinogenicity:

Component Methylenediphenyldiisocyanate, isomers and homologues: Negative - Inhalation – NOAEL, Rat - Male, Female = 1 mg/m³ (2 years; 5 days per week)

Negative - Inhalation – NOAEL, Rat - Female = 0.7 mg/m³ (2 years; 5 days per week)

Component Diphenylmethane 4,4'-diisocyanate: Positive - Inhalation – NOAEL, Rat - Male,

Female = 1 mg/m³ (2 years; 5 days per week)

Carcinogenic Class:

Component Methylenediphenyldiisocyanate, isomers and homologues: IARC group 3.

Component Diphenylmethane 4,4'-diisocyanate: IARC group 3

Mutagenicity:

Component Methylenediphenyldiisocyanate, isomers and homologues: OECD 474 - Experiment: In vivo – negative -Subject: Mammalian Animal

Experiment: In vivo – Equivocal - Subject: Mammalian Human

Component Diphenylmethane 4,4'-diisocyanate: EU test - Experiment: In vitro – negative -Subject: Bacteria Metabolic activation: +/-

OECD 474 Mammalian Erythrocyte Micronucleus Test – Experiment: In vivo – negative - Subject: Mammalian Animal

Teratogenicity:

Component Methylenediphenyldiisocyanate, isomers and homologues: Negative -

Inhalation, Rat - Male, Female = 4 mg/m³ NOAEL (20 days)

Component Diphenylmethane 4,4'-diisocyanate: Negative – Inhalation, Rat - Male,

Female = 12 mg/m³ NOAEL (20 days)

Potential chronic health effects:

Chronic Effects: Product contains material that can cause target organ damage. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Target Organs: Contains material which causes damage to the following organs: upper respiratory tract.

Carcinogenicity:

Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour

incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

Mutagenicity:

There is no substantial evidence of mutagenic potential.

Teratogenicity:

No birth defects were seen in two independent animal (rat) studies. Fetotoxicity was observed at doses that were extremely toxic (including lethal) to the mother.

Fetotoxicity was not observed at doses that were not maternally toxic. The doses used in these studies were maximal, respirable concentrations, which are well in excess of defined occupational exposure limits.

Fertility Effects:

No known critical effects or critical hazards

Developmental Effects:

No known critical effects or critical hazards

Medical conditions aggravated by overexposure

Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

SECTION 12. ECOLOGICAL INFORMATION

Environmental effects : By comparison with an analogous product, the following values are anticipated. The measured ecotoxicity is that of the hydrolysed product, generally under conditions maximizing production of soluble species. Even so, the observed ecotoxicity is low/very low. A pond study showed gross contamination caused no significant toxic effects on a wide variety of flora in all trophic levels (including fish), no detectable diaminodiphenylmethane (MDA), and no evidence of bioaccumulation of MDI or MDA.

Aquatic ecotoxicity:

Component Diphenylmethane 4,4'-diisocyanate: OECD 202 *Daphnia* sp Acute Immobilisation Test, Acute EC50 >1000 mg/L, Fresh water (*Daphnia*), 24 hours Static.

OECD 209 Activated Sludge, Respiration Inhibition Test, Acute EC50 >100 mg/L Fresh water (Bacteria) 3 hours Static.

OECD 203 Fish, Acute Toxicity Test, Acute LC50 >1000 mg/L (Fish) 96 hours Static.

OECD 211 *Daphnia Magna* Reproduction Test, Chronic NOEC >10 mg/L Fresh water (*Daphnia*) 21 days Semistatic

Biodegradability:

Component Diphenylmethane 4,4'-diisocyanate: OECD 302C Inherent Biodegradability Modified MITI Test (II), Result: -0% - not readily biodegradable – 28 days, Dose: 30 mg/L.

BCF = 200, high potential.

Other Ecological Information:

BCF = 200, high potential.

Mobility: By considering the production and use of the substance, it is unlikely that significant environmental exposure in the air or water will arise. Immiscible with water, but will react with water to produce inert and non-biodegradable solids. Conversion to soluble products, including diamino-diphenylmethane (MDA) is very low under the optimal laboratory conditions of good dispersion and low concentration. In air, the predominant degradation process is predicted to be relatively rapid OH radical attack, by calculation and by analogy with related diisocyanates.

Other ecological information

Other adverse effects : No known significant effects or critical hazards.

SECTION 13. WASTE DISPOSAL

WASTE DISPOSAL METHOD:

DISPOSE OF MATERIAL ACCORDING TO FEDERAL, STATE, AND LOCAL REGULATIONS.

SECTION 14. Transport Information

DOT: Not Regulated

IMO/IMDG: Not Regulated

SECTION 15. REGULATORY INFORMATION

HCS Classification: Toxic material, Irritant, Sensitizer.

US Federal regulations:

All components are listed or exempt (TSCA 8b)

TSCA 5(a) final significant new use rule (SNUR): 2-methoxyethanol.

TSCA 5(e) substance consent order, TSCA 12(b) one time export notification, TSCA (12(b) annual export notification: None

SARA 302/304/311/312 extremely hazardous substances: No ingredient listed.

Clean Air Act Section 112(b) Hazardous Air Pollutants (Haps): Diphenyl 4,4'-diisocyanate CAS# 101-68-8 @ 30-60%

Clean Air Act – Ozone Depleting Substances (ODS): This product does not contain nor is it manufactured with ozone depleting substances.

SARA 313 Form R Reporting Requirements: Diisocyanate compound (category code N120) @ 93% concentration.

CERCLA Hazardous Substances: Component Diphenylmethane 4,4'-diisocyanate @ 40.152% concentration, Section 304 listed, CERCLA reportable quantity = 12,453 pounds for the product.

State Regulations:

Pennsylvania – RTK – No components listed

California Prop 65: This product contains no listed substances known to the state of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canada:

WHIMS: Class D-2A, Material causing other toxic effects (Very Toxic).

WHIMS Class D-2B, Material causing other toxic effects (Toxic).

CEPA DSL: All components are listed or exempted.

SECTION 16: OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation



Safety Data Sheet

Seal Bond MA-252

Revision Date: November 16, 2015

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MA-252 PART C
PRODUCT CODES: MA-252 PART C

MANUFACTURER: Seal Bond
STREET ADDRESS: 14851 Michael Lane
CITY, STATE, ZIP: Spring Lake, MI 49456

INFORMATION PHONE: 616-850-0507
EMERGENCY PHONE: Chemtrec 800-424-9300
FAX PHONE: 616-850-0530

PREPARED BY: Kelly Barnes

Chemical Name or Class: sand

SECTION 2. HAZARDS IDENTIFICATION

Hazard Overview

GHS Classification: Carcinogenicity category 1, Specific target organ toxicity following repeated exposure category 1, Specific target organ toxicity (single exposure) category 3

GHS Label Elements and Precautionary Statements:



Label Elements:

Hazard Statements:

DANGER: May cause cancer

DANGER: Causes damage to organs through prolonged or repeated exposures (lungs, respiratory system)

WARNING: May cause respiratory irritation.

Precautionary statements:

P102 Keep out of reach of children.

P103 Read label before use

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P280 Wear protective gloves/protective clothing/eye protection/face protection

P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray P271 Use only outdoors or in a well-ventilated area.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P314 Get medical advice/attention if you feel unwell

P304 + P340 IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

Storage:

P405 Store locked up

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents/container to a waste disposal facility in accordance with local, state, federal or international laws

HMIS HAZARD CLASSIFICATION

HEALTH: 1 FLAMMABILITY: 0 REACTIVITY: 0 PERSONAL PROTECTIVE EQUIPMENT: E

POTENTIAL HEALTH EFFECTS

EYES:

MAY CAUSE REDDENING OF THE EYES OR EYE IRRITATION FROM AIRBORNE PARTICLES.

SKIN:

NONE KNOWN

INGESTION:

NONE KNOWN

INHALATION:

PROLONGED EXPOSURE TO RESPIRABLE CRYSTALLINE QUARTZ MAY CAUSE DELAYED LUNG INJURY (SILICOSIS). ACUTE OR RAPIDLY DEVELOPING SILICOSIS MAY OCCUR IN A SHORT PERIOD OF TIME IN HEAVY EXPOSURE IN SOME APPLICATIONS SUCH AS SAND BLASTING.

HEALTH HAZARDS (ACUTE AND CHRONIC):

MAY CAUSE DELAYED SILICOSIS OR RAPID SILICOSIS IN SOME OCCUPATIONS SUCH AS SANDBLASTING, SILICOSIS IS A FORM OF A DISABLING PULMONARY FIBROSIS WHICH CAN BE PROGRESSIVE AND COULD LEAD TO DEATH. INHALATION MAY LEAD TO LUNG SCARRING AND MASSIVE FIBROSIS WHICH COULD BE ACCOMPANIED BY RIGHT HEART ENLARGEMENT, HEART FAILURE, OR PULMONARY FAILURE, SMOKING AGGRAVATES THE EFFECTS OF EXPOSURE.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

RESPIRATORY CONDITIONS OR OTHER ALLERGIC AILMENTS CAN BE AGGRAVATED BY EXPOSURE

CARCINOGENICITY

OSHA: NO NTP: YES IARC: YES

ADDITIONAL CARCINOGENICITY INFORMATION:

IARC HAS DETERMINED THAT CRYSTALLINE SILICA INHALED IN THE FORM OF QUARTZ IS CARCINOGENIC TO HUMANS (GROUP 1- CARCINOGENIC TO HUMANS). THE NTP CLASSIFIES RESPIRABLE CRYSTALLINE SILICA AS REASONABLY ANTICIPATED TO BE A CARCINOGEN. Titanium Dioxide is listed by IARC as possibly carcinogenic to humans (group 2B).

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENT</u>	<u>CAS NO.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OSHA STEL</u>	<u>WEIGHT %</u>
*SILICON DIOXIDE	14808-60-7	10mg/m3	.1mg/m3	.1mg/m3	67
Portland Cement	65997-15-1	5mg/m3	1mg/m3	NONE	7-13
Calcium Sulfate (component of Cement)	13397-24-5	5mg/m3	10mg/m3	NONE	1-5
Calcium carbonate (component of cement)	1317-65-3	5mg/m3	3mg/m3	NONE	1-5
Calcium oxide (component of cement)	1305-78-8	5mg/m3	2mg/m3	NONR	1-5
Magnesium oxide (component of cement)	1309-48-4	15mg/m3	10mg/m3	NONE	1-5
Calcium Hydroxide	1305-62-0	5mg/m3	5mg/m3	NONE	1-5
Colors may contain @ 0-3-1.5%:					
Titanium Dioxide	13463-67-7	10mg/m3	10mg/m3	5mg/m3	
Iron III oxide	1309-37-1	10mg/m3	5mg/m3	NONE	
Iron oxide (C.I. pigment black11)	1317-61-9	10mg/m3	5mg/m3	NONE	
Precipitated silica	7631-86-9	NONE	80mg/m3	NONE	
Iron III oxide	20344-49-4	15mg/m3	5mg/m3	NONE	
ALUMINUM HYDROXIDE	21645-51-2	NONE	NONE	NONE	

*** indicates toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present.***

FOLLOW OSHA HAZARD COMMUNICATION RULE 29CFR SECTIONS 1910.1200, 1915.99, 1917.28, 1918.9, 1926.59, AND STATE AND LOCAL COMMUNITY RIGHT TO KNOW LAWS. (NOTE on Cement)Trace amounts of naturally occurring chemicals might be detected during chemical analysis. Trace constituents may include insoluble residue, some of which may be free crystalline silica, calcium oxide (Also known as lime or quick lime), magnesium oxide, potassium sulfate, sodium sulfate, chromium compounds, and nickel compounds. Note: Ingredients listed without percentages, the percentages are considered a trade secret.

SECTION 4. FIRST AID MEASURES

EYES:

FLUSH EYES WITH WATER FOR AT LEAST FIFTEEN MINUTES AND CONSULT A PHYSICIAN IF CONDITIONS WARRANT.

SKIN:

SKIN CONTACT WILL NORMALLY CAUSE NO HEALTH RISKS

INGESTION:

IF INGESTED, CONSULT A PHYSICIAN

INHALATION:

REMOVE VICTIM TO FRESH AIR AND ADMINISTER OXYGEN IF NECESSARY.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:

SECTION 5. FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR, UPPER: not available
(% by volume) LOWER: not available

FLASH POINT⁰ F: N/A

METHOD USED:

N/A

EXTINGUISHING MEDIA:

OTHER

SPECIAL FIRE FIGHTING PROCEDURES:

CRYSTALLINE SILICA IS NEITHER A FIRE NOR AN EXPLOSION HAZARD

UNUSUAL FIRE AND EXPLOSION HAZARDS:

NONE KNOWN.

SECTION 6. RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

WEAR RESPIRATOR AND USE DUSTLESS HANDLING EQUIPMENT TO CLEAN UP LARGE SPILLS, PLACE IN SUITABLE CONTAINERS FOR DISPOSAL. FLUSH AREA WITH WATER AFTER PICKUP OF MATERIAL.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

STORE IN COOL DRY PLACE. PROPERLY LABEL ALL CONTAINERS AND RESEAL ALL PARTIALLY USED CONTAINERS. AVOID CREATING ANY DUST WHEN WORKING WITH THIS MATERIAL.

OTHER PRECAUTIONS:

AVOID BREATHING DUST GENERATED FROM THE MATERIAL. OBSERVE CONDITIONS OF GOOD GENERAL HYGIENE AND SAFE WORKING PRACTICES. PROVIDE TRAINING FOR YOUR EMPLOYEES RELATING TO OCCUPATIONAL EXPOSURE TO QUARTZ DUST. SEE ASTM STANDARD E1132-86 STANDARD PRACTICE FOR HEALTH REQUIREMENTS RELATING TO EXPOSURE TO QUARTZ DUST. IF BETTER THAN 500 X PEL USE A SELF CONTAINED BREATHING APPARATUS. IF SANDBLASTING, USE ANY TYPE CE SUPPLIED AIR RESPIRATOR WITH FULL FACE PIECE OR HOOD.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

USE A NIOSH APPROVED RESPIRATOR AS REQUIRED TO PREVENT OVER-EXPOSURE TO QUARTZ DUST. PROVIDE SUFFICIENT EXHAUST TO KEEP EXPOSURE LEVELS BELOW THE ACGIH PEL.

VENTILATION:

USE EXHAUST SUFFICIENT TO MAINTAIN AIRBORNE PARTICULATES BELOW THE ACGIH PEL LIMITS ESTABLISHED.

PROTECTIVE GLOVES:

N/A

EYE PROTECTION:

SPLASH GOGGLES OR GLASSES WITH SIDE SHIELDS.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
PROVIDE ANY EQUIPMENT NECESSARY TO PREVENT THE INHALATION OF QUARTZ DUST.
WORK HYGIENIC PRACTICES:
OBSERVE GOOD GENERAL HYGIENIC PRACTICES.

SEE SECTION THREE FOR OCCUPATIONAL EXPOSURE LIMIT VALUES.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR: SAND GRANULAR CRUSHED OR GROUND WITH COLORING ADDED - NO ODOR
BOILING POINT OR RANGE ° F: N/A
VAPOR DENSITY (AIR = 1): N/A
SPECIFIC GRAVITY (H₂O = 1): 2.6
EVAPORATION RATE: N/A
SOLUBILITY IN WATER: INSOLUBLE IN WATER

Odor Threshold: N/A
pH: N/A
Melting point/freezing point: N/A
Vapor Pressure: N/A
Auto Ignition Temperature: N/A
Partition Coefficient: n-octanol/water: N/A
Decomposition Temperature: N/A

SECTION 10. STABILITY AND REACTIVITY

STABILITY:
STABLE
CONDITIONS TO AVOID (STABILITY):
CONTACT WITH POWERFUL OXIDIZING AGENTS SUCH AS FLUORINE, CHLORINE, TRIFLUORIDE, MANGANESE TRIOXIDE, OXYGEN TRIFLUORIDE
INCOMPATIBILITY (MATERIAL TO AVOID):
CAN REACT VIGOROUSLY WITH STRONG OXIDIZING AGENTS- SEE CONDITIONS TO AVOID
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:
SILICA WILL DISSOLVE IN HYDROCHLORIC ACID TO FORM A CORROSIVE GAS- SILICON TETRAFLUORIDE
HAZARDOUS POLYMERIZATION:
WILL NOT OCCUR.

SECTION 11. TOXICOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Silicon dioxide: Inhalation and retention of respirable crystalline silica can cause silicosis in several forms, chronic, accelerated or acute. Acute silicosis can occur with exposures to high concentrations of respirable crystalline silica over a very short time period, the symptoms of acute silicosis include progressive shortness of breath, fever, cough, and weight loss. Acute silicosis can be fatal. IARC concluded that there was sufficient evidence in humans for the carcinogenicity of crystalline silica in the form of quartz (Group 1). Exposure to respirable crystalline silica can also be associated with autoimmune disease, tuberculosis, kidney damage, non-malignant respiratory disease. For further information, see NIOSH Hazard Review- Occupational Effects of Occupational Exposure to Respirable Crystalline Silica published in April of 2002 should be reviewed.

Component Titanium Dioxide: Inhalation 4 h LC50 > 6.82 mg/l; Oral LD50 > 5000 mg/kg, rat; In February 2006, IARC listed titanium dioxide as possibly carcinogenic to humans Group 2B.

Component Calcium Oxide CAS# 1305-78-8: LD50 (mouse) 3059 mg/m³.

Component Iron III oxide CAS# 1309-37-1: Acute Oral Toxicity LD50 >5000 mg/kg (rat). Acute Dermal Toxicity LD50 >5000 mg/kg (rat)

Component Iron oxide (C.I. pigment black11) CAS# 1317-61-9: Acute Oral Toxicity LD50: > 5,000 mg/kg (Rat)

Skin Irritation rabbit, Non-irritating. Eye Irritation rabbit, Non-irritating. Sensitization dermal: non-sensitizer (Guinea pig).

Mutagenicity Genetic Toxicity in Vitro: Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)

Component CAS# 7631-86-9: LD50 (rat >5000 mg/kg, LD50 dermal (rat) >2000 mg/kg

Component Iron III oxide CAS# 20344-49-4: Acute Oral Toxicity LD50 >5000 mg/kg (rat).

Component ALUMINUM HYDROXIDE CAS# 21645-51-2: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Acute Potential Health Effects: May cause mild skin, eye and upper respiratory tract irritation. Ingestion: May cause gastrointestinal tract irritation: May affect bones (osteomalacia), metabolism, blood, behavior (muscle contraction, spasticity, change in motor activity), liver.

Component calcium Hydroxide CAS# 1305-62-0: LD50 mouse = 7300 mg/kg Oral. Other Toxic Effects on Humans: Extremely hazardous in case of eye contact (irritant) Hazardous in case of skin contact (irritant), of eye contact (corrosive), of ingestion, inhalation Slightly hazardous in case of skin contact (corrosive, permeator). Special Remarks on Chronic Effects on Humans: Mutagenicity: Cytogenic analysis [Rat]: Cell type: Ascities tumor; Dose 1200 mg/kg. Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation. Alkalies penetrate skin slowly. The extent of damage depends on the duration of contact. Eyes: Causes severe irritation of the eyes. Can cause "Lime Burns" of the eye. Clumps may lodge deep in the recesses of the eye, releasing calcium hydroxide over a long period of time. Severe burns of the cornea with possible damage to corneal nerves can occur. Ingestion: Causes gastrointestinal tract irritation with vomiting, diarrhea, severe pain. Vomitus may contain blood and desquamated mucosal lining. May cause delayed gastrointestinal burns and perforation (gastric or esophageal) with severe abdominal pain and rapid fall in blood pressure. Inhalation: Causes severe irritation of the respiratory tract (nose, throat, lungs), and mucous membranes with coughing, wheezing and/or shortness of breath. Material is destructive to tissue of the mucous membranes and upper respiratory tract. Chronic Potential Health Effects: Prolonged or repeated skin contact may produce severe irritation or dermatitis.

SECTION 12. ECOLOGICAL INFORMATION

No data for the product itself.

Component data:

Component Silicon Dioxide: There is no data that suggests that crystalline silica is toxic to birds, fish, invertebrates, microorganisms or plants.

Component Titanium Dioxide: *Pimephales promelas* (fathead minnow) < 1000 mg/l @ 96h LC50; *Pseudokirchneriella subcapitata* (green algae) 61 mg/l @ 72h EC50; *Daphnia magna* (water flea) > 1000 mg/l @ 48h EC50

Component Cement CAS# 65997-15-1: Ecotoxicity No recognized unusual toxicity to plants or animals

Component Iron III oxide CAS# 1309-37-1 Acute and Prolonged Toxicity to fish LC0 >1000 mg/l (golden Orfe). Acute toxicity to Aquatic Invertebrates EC0 > 10000 mg/l (water flea). Toxicity to Microorganisms EC0 > 1000mg/l (*pseudomonas putida*)

Component Iron oxide (C.I. pigment black11) CAS# 1317-61-9: Acute and Prolonged Toxicity to Fish LC0: > 1,000 mg/l (Golden orfe (*Leuciscus idus*), 48 hrs). Toxicity to Microorganisms EC0: > 1,000 mg/l, (*Pseudomonas fluorescens*, 24 hrs)

Component CAS# 7631-86-9: Ecotoxicity: EC50 (fish) .10000 mg/l (*daphnia* >10000 mg/l)

Component Iron III oxide CAS# 20344-49-4: Acute and Prolonged Toxicity to fish LC0 >1000 mg/l (golden Orfe). Toxicity to Microorganisms EC0 > 10000mg/l (*pseudomonas putida*)

Component ALUMINUM HYDROXIDE CAS# 21645-51-2: Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise. Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Component calcium Hydroxide CAS# 1305-62-0: Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

SECTION 13. WASTE DISPOSAL

WASTE DISPOSAL METHOD:

DISPOSE OF THE MATERIAL IN A WASTE DISPOSAL SITE IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL LAWS.

SECTION 14. Transport Information

DOT: Not Regulated

IMO/IMDG Not regulated

SECTION 15. REGULATORY INFORMATION

No data for the product itself.

Component data:

Component Silicon Dioxide: risk phrases: R 48/20 Harmful – Danger of serious damage to health by prolonged exposure through inhalation. Safety Phrases: S 22 – Do not breathe dust and S 38 – In case of insufficient ventilation, wear suitable respiratory equipment Crystalline Silica (Silicon Dioxide) is on the TSCA list. NTP list as a known human carcinogen, California proposition 65 list as a known carcinogen, Massachusetts Toxic Use Reduction Act list as toxic, Pennsylvania Worker and community right to know Act list as a hazardous substance. Crystalline Silica (Silicon Dioxide) is on the Canada DSL – WHMIS Classification D2A. Crystalline Silica is on the Australian Inventory of Chemicals Substances list, Japan Ministry of International Trade and Industry list, Korea Existing Chemicals Inventory with registry number 9212-5667 and the Phillipines Inventory of Chemicals and Chemical Substances list.

Component Titanium Dioxide: Contains Proposition 65 Chemicals, is on the PA Hazardous substance list, is on the NJ right to know Regulated chemical List. Titanium Dioxide is on inventory or in compliance with EINECS, TSCA, AICS, DSL, ENCS (JP), KECI (KR), PICCS (PH) and INV (CN).

Component Cement CAS# 65997-15-1: Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200 Portland cement is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program. Status under CERCLA/SUPERFUND 40 CFR 117 and 302 Not listed. Hazard Category under SARA(Title III), Sections 311 and 312 Portland cement qualifies as a "hazardous substance" with delayed health effects.

Status under SARA (Title III), Section 313 Not subject to reporting requirements under Section 313. Status under TSCA (as of May 1997) Some substances in portland cement are on the TSCA inventory list. Status under the Federal Hazardous Substances Act Portland cement is a "hazardous substance" subject to statutes promulgated under the subject act. Status under California Proposition 65 This product contains up to 0.05 percent of chemicals (trace elements) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist. (CANADA) Portland cement is considered to be a hazardous material under the Hazardous Product Act as defined by the

Controlled Products Regulations (Class E – Corrosive Material) and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

Component Iron III oxide CAS# 1309-37-1 Listed on TSCA Inventory. Section 313/312 hazard category: Chronic health hazard. Potential exposure to all of the California proposition 65 have been determined to be below the No significant risk level (NSRL). Component and its impurities (1%) are on the Pennsylvania, New Jersey right to know substance lists. Component contains the following chemicals listed on the New Jersey and Pennsylvania RTK special hazardous Substance lists: Manganese CAS# 7439-96-5 (0.7%) and Aluminum CAS# 7429-90-5 (0.29%). Component contains the following ingredients which are on the Pennsylvania, Massachusetts hazardous substance lists: Chromium CAS# 7440-47-3 (0.075%) and Nickel CAS# 7440-02-0 (0.04%) Component contains the following chemicals on the California Proposition 65 list known to the state of California to be carcinogenic: Nickel CAS# 7440-02-0 (0.04%) and Cobalt CAS# 7440-48-4 (30 ppm).

Component Iron oxide (C.I. pigment black11) CAS# 1317-61-9: Component is on the TSCA and Canada DSL lists. State Right-To-Know Information: The following chemicals are specifically listed by individual states; Potential exposure to the California Proposition 65 chemicals in this product have been determined to be below the No Significant Risk Level (NSRL)., The concentrations reported below in units of parts per million (ppm) or parts per billion (ppb) are maximum values. Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists: Components Pigment Black 11 CAS# 1317-61-9; 1 - 5% Amorphous Silica CAS# 7631-86-9 (1-5%). MA Right to Know Extraordinarily Hazardous Substance List: Arsenic CAS# 7440-38-2 (50ppm); Chromium CAS# 7440-47-3 (800ppm); Nickel CAS# 7440-02-0 (300ppm).

Component CAS# 7631-86-9: Is not classified as dangerous. National Chemical Inventory listings include – AICS, DSL, IECSC, EINECS, ENCS, KECI, NZLOC, PICCS, TSCA,

Component Iron III oxide CAS# 20344-49-4: Listed on TSCA Inventory. Potential exposure to all of the California proposition 65 chemicals have been determined to be below the No significant risk level (NSRL). Components are on the Pennsylvania right to know substance list. Component contains the following chemicals listed on the Pennsylvania RTK special hazardous Substance lists: chromium CAS# 7440-47-3 (0.02%) and nickel CAS# 7440-02-0 (0.015%). Component contains the following ingredients which are on the Massachusetts hazardous substance lists: Chromium CAS# 7440-47-3 (0.02%), arsenic CAS# 7440-38-2 (60ppm), Beryllium CAS# 7440-41-7 (1ppm) and Nickel CAS# 7440-02-0 (0.015%) Component contains the following chemicals on the California Proposition 65 list known to the state of California to be carcinogenic: Nickel CAS# 7440-02-0 (0.015%), arsenic CAS# 7440-38-2 (60ppm), Beryllium CAS# 7440-41-7 (1ppm) and Cobalt CAS# 7440-48-4 (70ppm)..

Component ALUMINUM HYDROXIDE CAS# 21645-51-2: Federal and State Regulations: TSCA 8(b) inventory: Aluminum hydroxide .Other Regulations: EINECS: This product is 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.

Component(s) Calcium Hydroxide 1305-62-0: Federal and State Regulations: Illinois toxic substances disclosure to employee act: Calcium hydroxide Rhode Island RTK hazardous substances: Calcium hydroxide Pennsylvania RTK: Calcium hydroxide Minnesota: Calcium hydroxide Massachusetts RTK: Calcium hydroxide New Jersey: Calcium hydroxide California Director's list of Hazardous Substances: Calcium hydroxide TSCA 8(b) inventory: Calcium hydroxide

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances. Other Classifications: WHMIS (Canada): CLASS E: Corrosive solid. DSCL (EEC): R34- Causes burns. R41- Risk of serious damage to eyes. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of water. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately

SECTION 16. OTHER INFORMATION

DISCLAIMER: The information Contained herein is based on the data available and is believed to be accurate, However, the manufacturer makes no warranty expressed or implied regarding the accuracy of this data or the results obtained from the use thereof. Accordingly, we assume no responsibility for injury from the use of this product.

N/A = Not Available

See Section 1 for date of preparation