PARAMOUNT MINERALS AND CHEMICALS LIMITED

MATERIAL SAFETY DATA SHEET OF DOLOSEL

| SECTION 01:P | RODUCT IDENTIFICAT | TION |
|--------------|--------------------|--------------------------------|
| MANUFACTURER | PARAMOUNT MIN | ERALS AND CHEMICALS LIMITED |
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| | whitener@vsnl.con | <u>n</u> |
| PRODUCT NAME | DOLOSEL | |
| COMPOSITION | COMPONENT | CAS NO |
| | FORMULATION | 66019-18-9 |
| | OF | |
| | P(AA/NaHSO3) | |
| | RESIDUAL | ESIDUAL N.A |
| | MONOMERS | |
| | WATER & | 7732-18-5 |
| | POLYHYDRIC | |
| | ALCOHOL | |

| SECTION 02:HAZARDOUS INGREDIENTS | |
|----------------------------------|--|
| NONE | |
| | |

SECTION 03:HAZARDS IDENTIFICATION NO DANGER CLASSIFICATION IN ACCORDANCE WITH THE EUROPEAN UNION GUIDELINES

| | SECTION 04:FIRST AID MEASURES |
|--------------|---|
| EYE CONTACT | IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH |
| | PLENTY OF WATER. CONSULT A PHYSICIAN IF IRRITATION |
| | CONTINUES. |
| SKIN CONTACT | IN CASE OF CONTACT, IMMEDIATELY FLUSH SKIN WITH |
| | PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING. |
| | WASH CLOTHING BEFORE REUSE. |
| INHALATION | IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE |
| | ARTIFICAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE |
| | OXYGEN. OBTAIN MEDICAL ATTENTION. |
| INGESTION | DRINK 1-2 GLASSES OF WATER. CONSULT A PHYSICIAN. DO |
| | NOT GIVE ANYTHING BY MOUTH TO AN UNCONCIOUS |
| | PERSON. |

| SECTION 0. | 5:FIRE FIGHTING MEASURES |
|--|--|
| FLASH POINT | NON COMBUSTIBLE |
| UPPER FLAMABLE LIMIT | NOT APPLICABLE |
| LOWER FLAMABLE LIMIT | NOT APPLICABLE |
| THERMAL DECOMPOSITION | >230.00 DEG C. |
| EXTINGUISHING MEDIA | USE EXTINGUISHING MEDIA AS APPROPRIATE FOR |
| | SURROUNDING FIRE |
| FIRE FIGHTING HAZARD | MATERIAL CAN SPLATTER ABOVE 100 DEG C. DRIED PRODUCT |
| | CAN BURN. |
| PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS | WEAR SELF CONTAINED BREATHING APPARATUS AND |
| | PROTECTIVE SUIT |

| SECTION 06 | S:ACCIDENTAL RELEASE MEASURES |
|---------------------------|--|
| PERSONAL PRECAUTIONS | USE PERSONAL PROTECTIVE EQUIPMENT. KEEP PEOPLE AWAY |
| | FROM AND UPWIND OF SPILL/LEAK. MATERIAL CAN CREATE |
| | SLIPPERY CONDITIONS. |
| ENVIRONMENTAL PRECAUTIONS | KEEP SPILLS AND CLEANING RUN OFF OUT OF MUNICIPAL |
| | SEWERS AND OPEN BODIES OF WATER. |
| CLEARING LEAK/SPILL | CONTAIN SPILLS IMMEDIATELY WITH INERT MATERIALS (E.G |
| | SAND, EARTH). TRANSFER LIQUIDS AND SOLID DIKING |
| | MATERIAL TO SEPARATE SUITABLE CONTAINERS FOR |
| | RECOVERY OR DISPOSAL |

| SECTION 0 | 7:HANDLING AND STORAGE |
|---------------------|---|
| HANDLING PROCEDURES | AVOID SKIN AND EYE CONTACT. AVOID BREATHING VAPORS. |
| | MAINTAIN A GOOD PERSONAL HYGIENE. MONOMER VAPORS |
| | CAN BE EVOLVED WHEN MATERIAL IS HEATED DURING |
| | PROCESS OPERATIONS. SEE SECTION 8 FOR TYPES OF |
| | VENTILATION REQUIRED. |

| STORAGE NEEDS | KEEP FROM FREEZING. STIR WELL BEFORE USE. STORAGE |
|---------------|---|
| | TEMPERATURE 1.00-49.00 DEG C. |

| SECTION 08:EXPOSU | RE CONTROLS/PERSONAL PROTECTION |
|--------------------------|---|
| EYE PROTECTION | SAFETY GLASSES WITH SIDE SHIELDS |
| GLOVES | CHEMICAL RESISTANT GLOVES |
| CLOTHING | WEAR ADEQUATE PROTECTIVE CLOTHING |
| RESPIRATORY | NONE REQUIRED UNDER NORMAL USE. A RESPIRATORY |
| | PROTECTION PROGRAM MEETING OSHA 1910.134 AND ANSI |
| | Z88.2 REQUIREMENTS OR EQUIVALENT MUST BE FOLLOWED |
| | WHENEVER WORK PLACE CONDITIONS WARRANT A |
| | RESPIRATORS USE |
| OTHER | EYE WASH FOUNTAIN/EMERGENCY SHOWER SHOULD BE IN |
| | CLOSE PROXIMITY |
| VENTILATION REQUIREMENTS | LOCAL EXHAUST VENTILATION WITH A MINIMUM CAPTURE |
| | VELOCITY OF 150 FT/MIN (0.75 M/SEC). |

| SECTION 09:PHYSIC | AL AND CHEMICAL PROPERTIES |
|---|-------------------------------|
| PHYSICAL STATE | LIQUID |
| ODOR | MILD ODOR |
| COLOUR | COLOURLESS |
| pH AT ROOM TEMPERATURE (25-30 DEG C) | 6.00-9.00 |
| BOILING POINT/RANGE | 100 DEG C (WATER) |
| MELTING POINT | 0 DEG C (WATER) |
| VAPOUR PRESSURE | 17.0 mmHg AT 20 DEG C (WATER) |
| RELATIVE VAPOUR DENSITY | <1.0 (WATER) |
| SOLUBILITY IN WATER | COMPLETELY SOLUBLE |
| SPECIFIC GRATIVE AT ROOM TEMPERATURE (25-30 | 1.10-1.15 |
| DEG C) | |
| VISCOSITY, DYNAMIC | 400.000-1,400.00 mPa.s |
| EVAPORATION RATE | <1.00 (WATER) |

TYPICAL VALUES MENTIONED ABOVE. NOT TO BE CONSTRUED AS SPECIFICATION.

| SECTION 10: | STABILITY AND REACTIVITY |
|----------------------------------|--|
| HAZARDOUS REACTIONS | NONE KNOWN. STABLE. HOWEVER AVOID TEMPERATURES |
| | ABOVE 230 DEG C, THE ONSET OF POLYMER DECOMPOSITION. |
| | THERMAL DECOMPOSITION IS DEPENDENT ON TIME AND |
| | TEMPERATURE |
| MATERIALS TO AVOID | NO KNOWN INCOMPTABILE PRODUCTS |
| HAZARDOUS DECOMPOSITION PRODUCTS | THERMAL DECOMPOSITION MAY YIELD ACRYLIC MONOMERS |

| SECTION 11:TC | XICOLOGICAL INFORMATION |
|---------------------------|--|
| ACUTE ORAL TOXICITY | LD50 RAT >5,000 MG/KG |
| ACUTE INHALATION TOXICITY | LC50 RAT NOEL 10 MG/M3 |
| ACUTE DERMAL TOXICITY | LD50 RABBIT >5,000 MG/KG |
| SKIN IRRITATION | RABBIT , SLIGHT IRRITATION |
| EYE IRRITATION | RABBIT SLIGHT IRRITATION |
| SENSITIZATION | GUINEA PIG, NOT A SENSITIZER |
| SUBCHRONIC TOXICITY | A 13 WEEK INHALATION STUDY IN RATS OF A OF A |
| | COMPOSITIONALLY SIMILAR POLYCARBOXYLATE MATERIAL |
| | SHOWED INFLAMMATORY EFFECTS IN THE LUNG AT |
| | CONCENTRATIONS OF 5 MG/M3 FOR 6 HOURS PER DAY, 5 |
| | DAYS PER WEEK. THE NO-OBSERVED-EFFECT-LEVEL FOR THIS |
| | RESPONSE WAS JUDGED TO BE 1 MG/M3. MAINTAINING |
| | AIRBORNE CONCENTRATIONS WITHIN THE RECOMMENDED |
| | EXPOSURE LIMIT IS NOT EXPECTED TO PRODUCE ADVERSE |
| | EFFECTS WITHIN THE LUNG. |
| MUTAGENICITY | AMES MUTAGENICITY - NEGATIVE |

| TOXICITY TO FISH | LC50 RAINBOW TROUT 96H |
|-----------------------------------|---|
| | 700 MG/L |
| | LC50 BLUEGILL SUNFISH (LEPOMIS MACROCHIRUS)96 H |
| | >1,000 MG/L |
| | LC50ZEBRA FISH (DANIO/BRACHYDANIO RERIO)96 H |
| TOXICITY TO ALGALE | >200 MG/L |
| | EC10ALGAE96 H |
| | >180 MG/L |
| TOXICITY TO AQUATIC INVERTEBRATES | EC50 DAPHNIA MAGNA 48H |
| | >1,000 MG/L |

| SECTION 13:DISPOSAL CONSIDERATIONS | |
|------------------------------------|--|
| WASTE DISPOSAL REGULATIONS | IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL |

REGULATIONS

SECTION 14:TRANSPORT INFORMATION NOT REGULATED BY DOT, IMO/IMDG – NOT DANGEROUS FOR TRANSPORT

SECTION 15: REGULATORY INFORMATION AND LABELING SYMBOL AND CLASSIFYING - NO MARKINGS REQUIRED , EU GUIDELINE-.1999/45/EC

| SECTION 16:OTHER INFORMATION | |
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| NOTE | THIS INFORMATION IS FURNISHED WITHOUT WARRANTY, |
| | EXPRESSED OR IMPLIED, EXCEPT THAT IT IS ACCURATE TO THE |
| | BEST KNOWLEDGE OF PARAMOUNT MINERALS AND |
| | CHEMICALS LIMITED. AND ASSUMES NO LEGAL |
| | RESPONSIBLITY FOR USE OR RELIANCE UPON THESE DATA. |
| PREPARED BY | HEALTH, ENVIRONMENT & SAFETY DEPT. |
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