

**Common Name:** NOVAPOL POLYETHYLENE - NOT COLOURED (ALL GRADES)

**Manufacturer:** NOVA CHEMICALS SWITZERLAND

**MSDS Revision Date:** 7/13/2010

**MSDS Format:** No Format Specified

**Grainger Item Number(s):** 4JX85, 4JX86, 4JX87, 4JX88, 4JX89, 4JX90, 4JX91, 4JX92

**Manufacturer Model  
Number(s):**

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SAFETY DATA SHEET

NOVA CHEMICALS (R\*)

MATERIAL NAME: NOVAPOL (R\*) POLYETHYLENE - NOT COLORED (ALL GRADES)

SDS ID: NOVA-0029EUN

### SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION

AND OF THE COMPANY

SYNONYMS:

HDPE, LDPE, LLDPE, LMDPE, MDPE POLYETHYLENE RESINS, ETHYLENE POLYMERS

CHEMICAL NAME: POLYETHYLENE

CHEMICAL FAMILY: POLYMER

MATERIAL USE:

THERMOPLASTIC RESIN EXTRUDED INTO FILM, SHEET OR PIPE, OR MOULDED INTO BOTTLES, CONTAINERS, LIDS AND OTHER ITEMS.

CHEMICAL FORMULA: (CH<sub>2</sub>) (CH<sub>2</sub>)<sub>x</sub>

APPLICABLE REACH REGISTRATION NUMBERS:

ETHYLENE: 01-2119462827-27-0067

ETHYLENE OXIDE: 01-2119432402-53-0078

NOVA CHEMICALS (INTERNATIONAL) S.A.

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SWITZERLAND

PRODUCT INFORMATION: +41-26-426-5757

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EMERGENCY TELEPHONE NUMBERS:

EUROPE AND ISRAEL: +44 (0) 1235 239 670 (NCEC) (24 HOURS)

MIDDLE EAST: +44 (0) 1235 239 671 (NCEC) (24 HOURS)

## **SECTION 2 - HAZARDS IDENTIFICATION**

HUMAN AND ENVIRONMENTAL HAZARDS:

THIS PRODUCT HAS BEEN CLASSIFIED FOR THE EUROPEAN UNION ACCORDING TO ANNEX VI OF DIRECTIVE 67/548/EEC.

THIS PRODUCT IS A PREPARATION CONTAINING POLYMERS AND ADDITIVES. ALTHOUGH IT MAY CONTAIN COMPONENTS THAT MAY BE CLASSIFIED, THE PRODUCT DOES NOT PRESENT A DANGER TO HUMAN HEALTH BY INHALATION, INGESTION OR CONTACT WITH THE SKIN OR TO THE AQUATIC ENVIRONMENT IN THE FORM IN WHICH IT IS PLACED ON THE MARKET. BASED UPON ARTICLE 12 OF DIRECTIVE 1999/45/EC SUCH PREPARATIONS DO NOT REQUIRE LABELLING.

EMERGENCY OVERVIEW:

CAUTION!

PRODUCT IS A CLEAR TO WHITE, NON-TOXIC SOLID PELLETT OR GRANULAR POWDER HAVING MINIMAL ODOR. DUSTS AND HEAT-RELEASED AIR EMISSIONS MAY BE

IRRITATING TO THE EYES, SKIN, AND RESPIRATORY SYSTEM. ACCUMULATED FINE DUSTS MAY FORM EXPLOSIVE AIR-DUST MIXTURES. SPILLED PRODUCT MAY CREATE A DANGEROUS SLIPPING HAZARD. KEEP RELEASED PELLETS AWAY FROM STORM SEWERS AND FROM ENTRY INTO OTHER AQUATIC SYSTEMS. UNDER FIRE CONDITIONS, PRODUCT WILL READILY BURN AND EMIT IRRITATING SMOKE. CONTACT WITH MOLTEN MATERIAL MAY CAUSE SERIOUS THERMAL BURNS.

POTENTIAL HEALTH EFFECTS:

EYES:

CONTACT WITH POWDER OR FINES MAY CAUSE MECHANICAL IRRITATION. CONTACT WITH HOT OR MOLTEN MATERIAL MAY CAUSE SEVERE INJURY, INCLUDING POSSIBLE BLINDNESS.

POTENTIAL HEALTH EFFECTS:

SKIN:

CONTACT WITH POWDER OR FINES MAY CAUSE MECHANICAL IRRITATION, WHICH IS INCREASED BY RUBBING OR IF SKIN IS DRY. CONTACT WITH HOT OR MOLTEN MATERIAL MAY CAUSE SEVERE THERMAL BURNS. THE CRYSTALLINE SILICA/TALC IS INEXTRICABLY BOUND OR COATED IN THE POLYETHYLENE; THIS APPEARS TO PREVENT ANY TOXIC REACTION TO THE SKIN.

POTENTIAL HEALTH EFFECTS:

INGESTION:

INGESTION MAY PRODUCE MILD GASTROINTESTINAL IRRITATION AND DISTURBANCES.

POTENTIAL HEALTH EFFECTS:

INHALATION:

INHALATION OF FINE PARTICLES MAY CAUSE RESPIRATORY IRRITATION. THERMAL PROCESSING FUMES MAY CAUSE IRRITATION, PULMONARY OEDEMA AND A POSSIBLE ASTHMA-LIKE RESPONSE. THE CRYSTALLINE SILICA/TALC IS INEXTRICABLY BOUND OR COATED IN THE POLYETHYLENE; THIS APPEARS TO PREVENT ANY TOXIC REACTION TO THE LUNGS.

ENVIRONMENTAL HAZARDS:

POLYETHYLENE IS AN ESSENTIALLY BIOLOGICALLY INERT SOLID AND CONSIDERED NON-TOXIC. IT IS STABLE (DOES NOT DECOMPOSE) IN LANDFILLS OR IN AQUATIC SYSTEMS.

### **SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

EC # COMPONENT PERCENT SYMBOLS RISKS  
BY WT.

POLYETHYLENE (ETHENE HOMOPOLYMER) \* >98  
9002-88-4

272-489-0 / FLUX-CALCINED DIATOMACEOUS EARTH 0-1 T R:49  
238-877-9 AND/OR TALC (HYDRATED MAGNESIUM  
SILICATE) \*\*  
68855-54-9 / 14807-96-6

ADDITIVES \*\*\* 0-1

ADDITIONAL INFORMATION:

ACCORDING TO DIRECTIVE 67/548/EEC AND DIRECTIVE 1999/45/EC, THIS PRODUCT IS NOT DANGEROUS.

\* THIS PRODUCT MAY ALSO BE DESCRIBED AS 1-BUTENE, POLYMER WITH ETHENE (CAS # 25087-34-7) OR AS 1-HEXENE, POLYMER WITH ETHENE (CAS # 25213-02-9). ETHENE AND ETHYLENE ARE INTERCHANGEABLE.

\*\* THIS IS 'ANTIBLOCK'. IT IS ADDED TO SOME NOVAPOL RESIN GRADES (E.G. FILM RESINS). FLUX-CALCINED DIATOMACEOUS EARTH MAY CONTAIN UP TO 75% CRYSTALLINE SILICA.

\*\*\* OTHER CHEMICAL ADDITIVES INCLUDING ANTIOXIDANTS, UV STABILIZERS, PROCESSING AIDS AND SLIP AGENTS MAY BE FORMULATED INTO VARIOUS POLYETHYLENE RESIN GRADES IN A TOTAL CONCENTRATION OF LESS THAN 1% WT/WT.

SEE SECTION 8 FOR APPLICABLE EXPOSURE LIMITS. SEE SECTION 11 FOR APPLICABLE TOXICITY DATA.

#### **SECTION 4 - FIRST AID MEASURES**

FIRST AID:

EYES:

REMOVE CONTACT LENSES, IF IT CAN BE DONE SAFELY. IMMEDIATELY FLUSH EYES WITH WATER FOR AT LEAST 15 MINUTES, WHILE HOLDING EYELIDS OPEN. SEEK MEDICAL ATTENTION IF SYMPTOMS DEVELOP OR PERSIST.

FIRST AID:

SKIN:

REMOVE DUSTY OR CONTAMINATED CLOTHING AND SHOES. WASH AFFECTED AREA WITH SOAP AND WATER. SEEK MEDICAL ATTENTION IF SYMPTOMS DEVELOP OR PERSIST. IN CASE OF CONTACT WITH MOLTEN PRODUCT, COOL RAPIDLY WITH WATER AND SEEK IMMEDIATE MEDICAL ATTENTION. DO NOT ATTEMPT TO REMOVE MOLTEN PRODUCT, OR MOLTEN PRODUCT THAT HAS COOLED, FROM SKIN WITHOUT MEDICAL ASSISTANCE.

FIRST AID:

INHALATION:

MOVE AFFECTED INDIVIDUAL TO NON-CONTAMINATED AIR. LOOSEN TIGHT CLOTHING SUCH AS A COLLAR, TIE, BELT OR WAISTBAND TO FACILITATE BREATHING. SEEK IMMEDIATE MEDICAL ATTENTION IF THE INDIVIDUAL IS NOT BREATHING, IS UNCONSCIOUS OR IF ANY OTHER SYMPTOMS PERSIST. INHALATION OF SMOKE FOLLOWING A FIRE MAY RESULT IN DELAYED PULMONARY OEDEMA; SEEK IMMEDIATE MEDICAL ATTENTION.

FIRST AID:

INGESTION:

MATERIAL IS NOT EXPECTED TO BE ABSORBED FROM THE GASTROINTESTINAL TRACT. DO

NOT INDUCE VOMITING. LOOSEN TIGHT CLOTHING SUCH AS A COLLAR, TIE, BELT OR WAISTBAND. SEEK IMMEDIATE MEDICAL ATTENTION.

FIRST AID:

NOTES TO PHYSICIAN:

AFTER ADEQUATE FIRST AID, NO FURTHER TREATMENT IS NECESSARY, UNLESS SYMPTOMS REAPPEAR. FOR MORE DETAILED MEDICAL EMERGENCY SUPPORT INFORMATION CALL THE APPROPRIATE EMERGENCY NUMBER LISTED IN SECTION 1. BURNS SHOULD BE TREATED AS THERMAL BURNS. MOLTEN RESIN WILL COME OFF AS HEALING OCCURS; THEREFORE, IMMEDIATE REMOVAL FROM THE SKIN IS NOT NECESSARY. TREATMENT SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT. INGESTED MATERIAL SHOULD PASS THROUGH THE DIGESTIVE SYSTEM WITHOUT INJURY. THE CRYSTALLINE SILICA (IF PRESENT)/TALC IS INEXTRICABLY BOUND OR COATED IN THE POLYETHYLENE; THIS APPEARS TO PREVENT ANY TOXIC REACTION TO THE SKIN OR LUNGS (IF INHALED).

## **SECTION 5 - FIRE FIGHTING MEASURES**

SEE SECTION 9:

PHYSICAL PROPERTIES FOR FLAMMABILITY LIMITS, FLASH POINT AND AUTOIGNITION INFORMATION.

GENERAL FIRE HAZARDS:

SOLID RESINS SUPPORT COMBUSTION BUT DO NOT MEET COMBUSTIBLE DEFINITION. PRODUCT WILL BURN AT HIGH TEMPERATURES BUT IS NOT CONSIDERED FLAMMABLE. UNDER FIRE CONDITIONS, PRODUCT WILL READILY BURN AND EMIT IRRITATING SMOKE. A HIGH CONCENTRATION OF AIRBORNE POWDERS OR DUST MAY FORM AN EXPLOSIVE MIXTURE WITH AIR.

EXPLOSION HAZARDS:

ACCUMULATED FINE DUSTS MAY FORM AN EXPLOSIVE MIXTURE WITH AIR. RISK OF DUST-AIR EXPLOSION IS INCREASED IF FLAMMABLE VAPORS ARE ALSO PRESENT. MAY ACCUMULATE HAZARDOUS STATIC CHARGE.

HAZARDOUS COMBUSTION PRODUCTS:

UPON HEATING, POLYETHYLENE MAY EMIT VARIOUS OLIGOMERS, WAXES AND OXYGENATED HYDROCARBONS AS WELL AS CARBON DIOXIDE, CARBON MONOXIDE AND SMALL AMOUNTS OF OTHER ORGANIC VAPORS (E.G. ALDEHYDES, ACROLEIN). INHALATION OF THESE DECOMPOSITION PRODUCTS MAY BE HAZARDOUS.

EXTINGUISHING MEDIA:

WATER FOG OR WATER SPRAY. IN THE CASE OF SMALL FIRES, DRY CHEMICAL OR CARBON DIOXIDE OR FOAM CAN BE USED. AVOID HIGH PRESSURE, DIRECT WATER STREAM THAT MAY SPREAD MOLTEN OR BURNING RESINS.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS:

POSITION UPWIND. KEEP UNNECESSARY PERSONNEL AWAY. MOVE CONTAINERS FROM FIRE AREA IF YOU CAN DO SO WITHOUT RISK. FIGHT FIRE FROM MAXIMUM DISTANCE OR USE UNMANNED HOLDERS OR MONITOR NOZZLES. FIRE FIGHTERS SHOULD WEAR FULL-FACE, SELF-CONTAINED BREATHING APPARATUS AND THERMAL PROTECTIVE CLOTHING. AVOID INHALING ANY SMOKE AND COMBUSTION MATERIALS. REMOVE AND CLEAN OR DESTROY ANY CONTAMINATED CLOTHING. COOL CONTAINERS WITH FLOODING QUANTITIES OF WATER UNTIL WELL AFTER THE FIRE IS OUT. CONTROL RUNOFF WATERS TO PREVENT

ENTRY INTO SEWERS, DRAINS, DITCHES, UNDERGROUND OR CONFINED SPACES AND WATERWAYS.

## **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

### PERSONAL PRECAUTIONS:

AVOID STANDING OR WALKING ON SPILLED PRODUCT - LOOSE PELLETS MAY CAUSE A SLIPPING HAZARD. ELIMINATE SOURCES OF IGNITION. EXTINGUISH ALL FLAMES IN THE VICINITY. NO SMOKING OR OPEN FLAMES PERMITTED IN STORAGE, USE OR HANDLING AREAS. DISSIPATE STATIC ELECTRICITY DURING TRANSFER OR PROCESSING BY PROPER EARTHING (GROUNDING) AND BONDING CONTAINERS AND EQUIPMENT.

### EVACUATION PROCEDURES:

ISOLATE AREA. KEEP UNNECESSARY PERSONNEL AWAY. ALERT STAND-BY EMERGENCY AND FIRE FIGHTING PERSONNEL.

### ENVIRONMENTAL PRECAUTIONS:

PREVENT ENTRY INTO SEWERS, DRAINS, DITCHES AND WATERWAYS.

### SPILLS:

STOP LEAK, ISOLATE AND CONTAIN SPILL. PREVENT ENTRY INTO SEWERS, DRAINS, DITCHES, UNDERGROUND OR CONFINED SPACES, WATER INTAKES AND WATERWAYS. SPILLED PRODUCT MAY CREATE A DANGEROUS SLIPPING HAZARD. USE APPROPRIATE TOOLS TO PUT THE SPILLED SOLID IN AN APPROPRIATE DISPOSAL OR RECOVERY CONTAINER. REUSE OR RECYCLE WHERE POSSIBLE.

### SPECIAL PROCEDURES:

CONTACT LOCAL POLICE/EMERGENCY SERVICES AND APPROPRIATE EMERGENCY TELEPHONE NUMBERS PROVIDED IN SECTION 1. ENSURE THAT STATUTORY AND REGULATORY REPORTING REQUIREMENTS IN THE APPLICABLE JURISDICTION ARE MET. WEAR APPROPRIATE PROTECTIVE EQUIPMENT AND CLOTHING DURING CLEANUP. INDIVIDUALS WITHOUT APPROPRIATE PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEANUP HAS BEEN COMPLETED.

### OTHER INFORMATION:

ACCUMULATED FINE DUSTS MAY FORM AN EXPLOSIVE MIXTURE WITH AIR. RISK OF DUST-AIR EXPLOSION IS INCREASED IF FLAMMABLE VAPORS ARE ALSO PRESENT.

SEE SECTION 8 FOR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT AND SEE SECTION 13 FOR WASTE DISPOSAL CONSIDERATIONS.

## **SECTION 7 - HANDLING AND STORAGE**

### HANDLING PROCEDURES:

HANDLE IN CONTAINED AND PROPERLY DESIGNED EQUIPMENT SYSTEMS. USE WITH ADEQUATE VENTILATION. AVOID INGESTION AND INHALATION. KEEP AWAY FROM UNCONTROLLED HEAT AND INCOMPATIBLE MATERIALS. EARTH (GROUND) ALL MATERIAL HANDLING AND TRANSFER EQUIPMENT TO DISSIPATE BUILD-UP OF STATIC ELECTRICITY. KEEP HANDLING AREAS FREE OF LOOSE PELLETS, POWDERS AND DUST BUILDUP. EVERY EFFORT SHOULD BE MADE TO PREVENT THE ACCUMULATION OF POWDERS OR FINE DUSTS AROUND MATERIAL HANDLING SYSTEMS. ACCUMULATED POWDERS OR FINE

DUSTS MAY FORM EXPLOSIVE AIR-DUST MIXTURES. FOR ADDITIONAL INFORMATION ON CONTROL OF STATIC AND MINIMIZING POTENTIAL DUST AND FIRE HAZARDS, REFER TO NFPA-654, "STANDARD FOR THE PREVENTION OF FIRE AND DUST EXPLOSIONS FROM THE MANUFACTURING, PROCESSING, AND HANDLING OF COMBUSTIBLE PARTICULATE SOLIDS, 2006 EDITION". SPILLED PRODUCT MAY CREATE A DANGEROUS SLIPPING HAZARD.

STORAGE PROCEDURES:

STORAGE AREA SHOULD BE CLEARLY IDENTIFIED, WELL ILLUMINATED, CLEAR OF OBSTRUCTION AND ACCESSIBLE ONLY TO TRAINED AND AUTHORIZED PERSONNEL. STORE IN CLOSED, EARTHED (GROUNDED) AND PROPERLY DESIGNED VESSELS, AWAY FROM UNCONTROLLED HEAT AND INCOMPATIBLE MATERIALS. OUTDOOR STORAGE OF PRODUCT IN BAGS REQUIRES PROTECTION FROM ULTRA-VIOLET SUNLIGHT BY USE OF A UV STABILIZED BAG OR ALTERNATE MEANS. AVOID ACCUMULATION OF DUST BY FREQUENT CLEANING AND SUITABLE CONSTRUCTION OF STORAGE AND HANDLING AREAS. KEEP SHOVELS AND VACUUM SYSTEMS READILY AVAILABLE FOR CLEANUP OF LOOSE MATERIAL. DO NOT ENTER FILLED BULK CONTAINERS AND ATTEMPT TO WALK OVER PRODUCT, DUE TO RISK OF SLIPPING AND POSSIBLE SUFFOCATION. USE A FALL ARREST SYSTEM WHEN WORKING NEAR OPEN BULK CONTAINERS.

SEE SECTION 8:

EXPOSURE CONTROLS/PERSONAL PROTECTION FOR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT. SEE SECTION 10 FOR INFORMATION ON INCOMPATIBILITIES.

## **SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

### EXPOSURE GUIDELINES

A:

GENERAL PRODUCT INFORMATION:

REFER TO PUBLISHED EXPOSURE LIMITS - USE EFFECTIVE CONTROL MEASURES AND PPE TO MAINTAIN WORKER EXPOSURE TO CONCENTRATIONS THAT ARE BELOW THESE LIMITS. ENSURE THAT EYEWASH STATIONS AND SAFETY SHOWERS ARE IN CLOSE PROXIMITY TO WORK LOCATIONS. CHECK LOCAL REGULATIONS FOR APPLICABLE EXPOSURE LIMITS.

NOTE:

IN THIS PRODUCT, ANY CRYSTALLINE SILICA/TALC CONTENT IS INEXTRICABLY BOUND OR COATED IN THE POLYETHYLENE. THIS APPEARS TO PREVENT ANY TOXIC REACTION TO THE LUNGS.

B:

SUBSTANCE EXPOSURE LIMITS:

POLYETHYLENE (ETHENE HOMOPOLYMER) (-):

ACGIH:

10 MG/M3 TWA (INHALABLE PARTICLES, RECOMMENDED)  
3 MG/M3 TWA (RESPIRABLE PARTICLES, RECOMMENDED) (RELATED TO PARTICULATES (INSOLUBLE OR POORLY SOLUBLE) NOT OTHERWISE SPECIFIED (PNOS))

BELGIUM:

3 MG/M3 TWA (ALVEOLAR FRACTION)  
10 MG/M3 TWA (INHALABLE FRACTION) (RELATED TO NUISANCE PARTICULATES)

IRELAND:

10 MG/M3 TWA (TOTAL INHALABLE)  
4 MG/M3 TWA (RESPIRABLE) (RELATED TO NUISANCE PARTICULATES)

PORTUGAL:

10 MG/M3 TWA (INHALABLE FRACTION, PARTICULATE MATTER CONTAINING NO ASBESTOS AND <1% CRYSTALLINE SILICA)

3 MG/M3 TWA (RESPIRABLE FRACTION, PARTICULATE MATTER CONTAINING NO ASBESTOS AND <1% CRYSTALLINE SILICA) (RELATED TO NUISANCE PARTICULATES)

SPAIN:

10 MG/M3 VLA-ED (RECOMMENDED LIMIT, THIS VALUE IS FOR THE PARTICULATED MATTER THAT IS FREE FROM ASBESTOS AND CONTAINS LESS THAN 1% OF CRYSTALLINE SILICA, INHALABLE FRACTION)

3 MG/M3 VLA-ED (RECOMMENDED LIMIT, THIS VALUE IS FOR THE PARTICULATED MATTER THAT IS FREE FROM ASBESTOS AND CONTAINS LESS THAN 1% OF CRYSTALLINE SILICA, RESPIRABLE FRACTION) (RELATED TO NUISANCE PARTICULATES)

FLUX-CALCINED DIATOMACEOUS EARTH (272-489-0):

ACGIH:

0.025 MG/M3 TWA (RESPIRABLE FRACTION) (RELATED TO SILICA, CRYSTALLINE - (ALPHA) -QUARTZ)

AUSTRIA: 0.3 MG/M3 MAK (RESPIRABLE FRACTION)

BELGIUM: 0.1 MG/M3 TWA (ALVEOLAR DUST) (RELATED TO QUARTZ)

DENMARK:

0.3 MG/M3 TWA (TOTAL)  
0.1 MG/M3 TWA (RESPIRABLE) (RELATED TO QUARTZ)

FINLAND:

0.05 MG/M3 TWA (RESPIRABLE)  
0.2 MG/M3 TWA (BLASTING AND QUARRYING, RESPIRABLE) (RELATED TO QUARTZ)

FRANCE:

0.1 MG/M3 VME (RESTRICTIVE LIMIT, ALVEOLAR FRACTION) (RELATED TO QUARTZ)

GERMANY:

0.3 MG/M3 TWA (RESPIRABLE FRACTION)  
0.3 MG/M3 MAK (RESPIRABLE FRACTION)

IRELAND:

0.05 PPM STEL (RESPIRABLE DUST) (RELATED TO QUARTZ)  
1.2 MG/M3 TWA (RESPIRABLE DUST)

UNDER REVIEW (HSE, RESPIRABLE) (RELATED TO QUARTZ)

NETHERLANDS: 0.075 MG/M3 TWA (RESPIRABLE DUST) (RELATED TO QUARTZ)

PORTUGAL: 0.025 MG/M3 TWA (RESPIRABLE FRACTION) (RELATED TO QUARTZ)

SPAIN: 0.1 MG/M3 VLA-ED (RESPIRABLE FRACTION) (RELATED TO QUARTZ)

SWEDEN: 0.1 MG/M3 LLV (RESPIRABLE DUST) (RELATED TO QUARTZ)



UNITED KINGDOM:

0.3 MG/M3 STEL (RESPIRABLE) (RELATED TO QUARTZ)

0.3 MG/M3 TWA (RESPIRABLE) (RELATED TO QUARTZ)

TALC (HYDRATED MAGNESIUM SILICATE) (238-877-9):

ACGIH:

2 MG/M3 TWA (PARTICULATE MATTER CONTAINING NO ASBESTOS AND <1% CRYSTALLINE SILICA, RESPIRABLE FRACTION)

AUSTRIA: 2 MG/M3 MAK (ASBESTOS-FREE FIBRES, RESPIRABLE FRACTION)

BELGIUM: 2 MG/M3 TWA

DENMARK: 0.3 FIBER/CM3 TWA

FINLAND:

0.5 FIBER/CM3 TWA (FIBRE)

5 MG/M3 TWA (GRANULAR)

GREECE:

10 MG/M3 TWA (INHALABLE FRACTION)

2 MG/M3 TWA (RESPIRABLE FRACTION)

IRELAND:

10 MG/M3 TWA (TOTAL INHALABLE DUST)

0.8 MG/M3 TWA (RESPIRABLE DUST)

NETHERLANDS: 0.25 MG/M3 TWA

PORTUGAL:

2 MG/M3 TWA (RESPIRABLE FRACTION, PARTICULATE MATTER CONTAINING NO ASBESTOS AND <1% CRYSTALLINE SILICA)

SPAIN:

2 MG/M3 VLA-ED (THIS VALUE IS FOR THE PARTICULATED MATTER THAT IS FREE FROM ASBESTOS AND CONTAINS LESS THAN 1% OF CRYSTALLINE SILICA, RESPIRABLE FRACTION)

SWEDEN: 2 MG/M3 LLV (TOTAL DUST)

1 MG/M3 LLV (RESPIRABLE DUST)

UNITED KINGDOM:

3 MG/M3 STEL (RESPIRABLE DUST)

1 MG/M3 TWA (RESPIRABLE DUST)

ENGINEERING CONTROLS:

ENGINEERING METHODS TO REDUCE HAZARDOUS EXPOSURE ARE PREFERRED CONTROLS. METHODS INCLUDE MECHANICAL VENTILATION (DILUTION AND LOCAL EXHAUST) PROCESS OR PERSONAL ENCLOSURE, REMOTE AND AUTOMATED OPERATION, CONTROL OF PROCESS CONDITIONS, LEAK DETECTION AND REPAIR SYSTEMS, AND OTHER PROCESS MODIFICATIONS. ENSURE ALL EXHAUST VENTILATION SYSTEMS ARE DISCHARGED TO OUTDOORS, AWAY FROM AIR INTAKES AND IGNITION SOURCES. SUPPLY SUFFICIENT REPLACEMENT AIR TO MAKE UP FOR AIR REMOVED BY EXHAUST SYSTEMS. ADMINISTRATIVE (PROCEDURE) CONTROLS AND USE OF PERSONAL PROTECTIVE EQUIPMENT MAY ALSO BE REQUIRED.

PERSONAL PROTECTIVE EQUIPMENT:

PERSONAL PROTECTIVE EQUIPMENT:

EYES/FACE:

WEAR SAFETY GLASSES DURING NORMAL HANDLING. WEAR FULL-FACE SHIELD DURING THERMAL PROCESSING IF CONTACT WITH MOLTEN MATERIAL IS LIKELY.

PERSONAL PROTECTIVE EQUIPMENT:

SKIN:

WEAR THERMAL INSULATING GLOVES AND OTHER PROTECTIVE CLOTHING (SUCH AS LONG SLEEVED SHIRTS AND LONG PANTS) WHENEVER MOLTEN MATERIAL IS PRESENT. SAFETY FOOTWEAR WITH GOOD TRACTION IS RECOMMENDED TO HELP PREVENT SLIPPING. STATIC DISSIPATIVE (SD) RATED FOOTWEAR IS RECOMMENDED.

PERSONAL PROTECTIVE EQUIPMENT:

RESPIRATORY:

IF ENGINEERING CONTROLS AND VENTILATION ARE NOT SUFFICIENT TO PREVENT BUILDUP OF AEROSOLS, VAPORS OR DUSTS, APPROPRIATE AIR-PURIFYING RESPIRATORS OR SELF-CONTAINED BREATHING APPARATUS (SCBA) THAT MEETS THE REQUIREMENTS OF THE EUROPEAN STANDARD FOR RESPIRATORY PROTECTION (EN 149) APPROPRIATE FOR EXPOSURE POTENTIAL SHOULD BE USED. AIR- SUPPLIED BREATHING APPARATUS MUST BE USED WHEN OXYGEN CONCENTRATIONS ARE LOW OR IF AIRBORNE CONCENTRATIONS EXCEED THE LIMITS OF THE AIR PURIFYING RESPIRATORS.

PERSONAL PROTECTIVE EQUIPMENT:

GENERAL:

PERSONAL PROTECTIVE EQUIPMENT (PPE) SHOULD NOT BE CONSIDERED A LONG-TERM SOLUTION TO EXPOSURE CONTROL. EMPLOYER PROGRAMS TO PROPERLY SELECT, FIT, MAINTAIN, AND TRAIN EMPLOYEES TO USE EQUIPMENT MUST ACCOMPANY PPE. CONSULT A COMPETENT INDUSTRIAL HYGIENE RESOURCE, THE PPE MANUFACTURER'S RECOMMENDATION, AND/OR APPLICABLE REGULATIONS TO DETERMINE HAZARD POTENTIAL AND ENSURE ADEQUATE PROTECTION.

## **SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES**

PHYSICAL STATE AND APPEARANCE: SOLID, PELLETS OR GRANULAR POWDER

COLOR: CLEAR TO WHITE

ODOR: MINIMAL, SWEET

pH: NOT APPLICABLE

VAPOR PRESSURE: NOT APPLICABLE

VAPOR DENSITY AT 0 DEG. C (AIR=1): NOT APPLICABLE

BOILING POINT: NOT APPLICABLE

MELTING POINT:

RANGE: 105 DEG. C TO 135 DEG. C

SOLUBILITY (H<sub>2</sub>O): INSOLUBLE

SPECIFIC GRAVITY (WATER=1):  
RANGE: 0.905 TO 0.965

EVAPORATION RATE (n-BUTYL ACETATE=1): NOT APPLICABLE

OCTANOL/H<sub>2</sub>O COEFF.: NOT APPLICABLE

DECOMPOSITION TEMPERATURE: VARIES; >300 DEG. C

SOFTENING POINT:  
RANGE: 85 DEG. C TO 127 DEG. C

AUTO IGNITION:  
RANGE: 330 DEG. C TO 410 DEG. C

FLASH POINT: NOT APPLICABLE  
FLASH POINT METHOD: NOT APPLICABLE

UPPER FLAMMABLE LIMIT (UFL): NOT APPLICABLE  
LOWER FLAMMABLE LIMIT (LFL): NOT APPLICABLE

FLAMMABILITY CLASSIFICATION: NOT FLAMMABLE

## **SECTION 10 - STABILITY & REACTIVITY INFORMATION**

CHEMICAL STABILITY:  
THIS PRODUCT IS STABLE UNDER NORMAL USE CONDITIONS FOR SHOCK, VIBRATION, PRESSURE, OR TEMPERATURE.

CHEMICAL STABILITY:

CONDITIONS TO AVOID:  
AVOID STRONG OXIDIZING AGENTS. AVOID PROCESSING MATERIAL OVER 300 DEG. C.

INCOMPATIBILITY:  
MAY REACT WITH STRONG OXIDIZING AGENTS. ORGANIC SOLVENTS, ETHER, GASOLINE, LUBRICATING OILS, CHLORINATED HYDROCARBONS AND AROMATIC HYDROCARBONS MAY REACT WITH AND DEGRADE POLYETHYLENE. POWDERS OR DUSTS MAY FORM AN EXPLOSIVE MIXTURE WITH AIR. RISK OF DUST-AIR EXPLOSION IS INCREASED IF FLAMMABLE VAPORS ARE ALSO PRESENT.

POSSIBILITY OF HAZARDOUS REACTIONS OR HAZARDOUS POLYMERIZATION:  
HAZARDOUS POLYMERIZATION NOT LIKELY TO OCCUR.

CORROSIVITY: NOT CORROSIVE TO THE COMMON METALS.

HAZARDOUS DECOMPOSITION:  
UPON HEATING, POLYETHYLENE MAY EMIT VARIOUS OLIGOMERS, WAXES AND OXYGENATED HYDROCARBONS AS WELL AS CARBON DIOXIDE, CARBON MONOXIDE AND SMALL AMOUNTS OF OTHER ORGANIC VAPORS (E.G. ALDEHYDES, ACROLEIN). INHALATION OF THESE

DECOMPOSITION PRODUCTS MAY BE HAZARDOUS.

## **SECTION 11 - TOXICOLOGICAL INFORMATION**

A:

ACUTE TOXICITY - GENERAL PRODUCT INFORMATION:

MATERIAL IS CONSIDERED ESSENTIALLY INERT AND NON-TOXIC. EXPOSURES TO HIGH LEVELS OF DUST OR HEATED FUMES MAY CAUSE IRRITATION AND POSSIBLE PULMONARY OEDEMA. CONTACT WITH MOLTEN MATERIAL MAY CAUSE SEVERE THERMAL BURNS. THE PRODUCT IS EXPECTED TO PRESENT A LESSER DEGREE OF HAZARD SINCE THE HAZARDOUS COMPONENTS ARE INCORPORATED IN A POLYMER MATRIX.

THE FOLLOWING ADDITIONAL INFORMATION HAS BEEN FOUND FOR ITS COMPONENTS:

FLUX-CALCINED DIATOMACEOUS EARTH/CRYSTALLINE SILICA/TALC (HYDRATED MAGNESIUM SILICATE):

INHALATION MAY CAUSE DISCOMFORT OR IRRITATION TO THE RESPIRATORY TRACT AND NASAL PASSAGES. MAY BE IRRITATING TO EYES AND SKIN.

B:

ACUTE TOXICITY - LD50/LC50:

POLYETHYLENE (ETHENE HOMOPOLYMER) (-):

INHALATION LC50 MOUSE: 12 G/M3/30M

POLYETHYLENE (1-BUTENE, POLYMER WITH ETHENE) (-):

ORAL LD50 RAT: 4 G/KG

FLUX-CALCINED DIATOMACEOUS EARTH (272-489-0):

ORAL LD50 RAT: 500 MG/KG (RELATED TO QUARTZ)

C:

CHRONIC TOXICITY - GENERAL PRODUCT INFORMATION:

PRODUCT HAS MINIMAL CHRONIC TOXICITY. MOST POLYETHYLENE DUST PARTICLES ARE LARGE AND NON-RESPIRABLE. THERE ARE NO KNOWN OR REPORTED REPRODUCTIVE OR GENETIC EFFECTS. THE PRODUCT IS EXPECTED TO PRESENT A LESSER DEGREE OF HAZARD SINCE THE HAZARDOUS COMPONENTS ARE INCORPORATED IN A POLYMER MATRIX. THE FOLLOWING ADDITIONAL INFORMATION HAS BEEN FOUND FOR ITS COMPONENTS:

FLUX-CALCINED DIATOMACEOUS EARTH/CRYSTALLINE SILICA:

TARGET ORGAN IS THE LUNG AND RESPIRATORY SYSTEM. IARC HAS CLASSIFIED CRYSTALLINE SILICA AS A GROUP 1 (CARCINOGENIC TO HUMANS). HOWEVER, THE CRYSTALLINE SILICA IS CONSIDERED BOUND INTO THE POLYETHYLENE; THIS APPEARS TO PREVENT ANY TOXIC REACTION TO THE SKIN OR LUNGS.

TALC (HYDRATED MAGNESIUM SILICATE):

INHALATION OF DUST CAUSE RESPIRATORY IRRITATION AND DIFFICULTY BREATHING. LONG-TERM INHALATION MAY CAUSE CHRONIC LUNG DISEASE OR TALC PNEUMOCONIOSIS.

D:

SUBSTANCE CARCINOGENICITY:

POLYETHYLENE (ETHENE HOMOPOLYMER) (-):

IARC: SUPPLEMENT 7 (1987), MONOGRAPH 19 (1979) (GROUP 3 (NOT CLASSIFIABLE))

FLUX-CALCINED DIATOMACEOUS EARTH (272-489-0):

IARC:

MONOGRAPH 68 (1997) (LISTED UNDER CRYSTALLINE SILICA INHALED IN THE FORM OF QUARTZ OR CRISTOBALITE FROM OCCUPATIONAL SOURCES) (RELATED TO QUARTZ) (GROUP 1 (CARCINOGENIC TO HUMANS))

GERMANY:

CATEGORY 1 (CAUSES CANCER IN MAN, ALVEOLA FRACTION) (RELATED TO QUARTZ)

NETHERLANDS: PRESENT (RESPIRABLE DUST, CRYSTALLINE) (RELATED TO QUARTZ)

TALC (HYDRATED MAGNESIUM SILICATE) (238-877-9):

IARC:

MONOGRAPH 93 (IN PREP), SUPPLEMENT 7 (1987), MONOGRAPH 42 (1987) (GROUP 3 (NOT CLASSIFIABLE))

GERMANY:

CATEGORY 3B (COULD BE CARCINOGENIC FOR MAN, FREE OF ASBESTOS FIBRES)

## **SECTION 12 - ECOLOGICAL INFORMATION**

ECOTOXICITY:

A:

GENERAL PRODUCT INFORMATION:

POLYETHYLENE IS AN ESSENTIALLY BIOLOGICALLY INERT SOLID AND CONSIDERED NON-TOXIC TO THE AQUATIC ENVIRONMENT. IT IS STABLE (DOES NOT DECOMPOSE) IN LANDFILLS OR IN AQUATIC SYSTEMS.

B:

COMPONENT ANALYSIS - ECOTOXICITY - AQUATIC/TERRESTRIAL TOXICITY:

TALC (HYDRATED MAGNESIUM SILICATE) (238-877-9):

96 HR LC50 BRACHYDANIO RERIO: >100 G/L (SEMI-STATIC)

ENVIRONMENTAL FATE:

IF RELEASED INTO WATERCOURSES, MOST POLYETHYLENE PELLETS FLOAT. PELLETS ARE PERSISTENT IN AQUATIC AND TERRESTRIAL SYSTEMS. PRODUCT SHOULD BE RECOVERED FROM WATER AND LAND FOLLOWING SPILLS. THIS PRODUCT HAS NOT BEEN FOUND TO MIGRATE THROUGH SOILS.

PERSISTENCE/DEGRADABILITY:

PRODUCT DOES NOT READILY DEGRADE. UNDER OPTIMAL OXIDATION CONDITIONS, >99% OF POLYETHYLENE WILL REMAIN INTACT AFTER EXPOSURE TO MICROBIAL ACTIONS. PRODUCT WILL SLOWLY CHANGE (EMBRITTLE) IN THE PRESENCE OF SUNLIGHT, BUT WILL NOT FULLY BREAKDOWN. PRODUCT BURIED IN LANDFILL HAS BEEN FOUND TO BE STABLE OVER TIME. NO TOXIC DEGRADATION PRODUCTS ARE KNOWN TO BE PRODUCED.

BIOACCUMULATION/ACCUMULATION:

PELLETS MAY ACCUMULATE IN THE DIGESTIVE SYSTEMS OF BIRDS AND AQUATIC LIFE,

CAUSING INJURY AND POSSIBLE DEATH DUE TO STARVATION.

## **SECTION 13 - DISPOSAL/RECYCLING CONSIDERATIONS**

PRECAUTIONS: REFER TO SECTION 7 BEFORE HANDLING THE PRODUCT OR CONTAINERS.

WASTE CODE(S) :

IF DISCARDED AFTER USE, THIS POLYMER DOES NOT MEET THE DEFINITION OF A HAZARDOUS WASTE ACCORDING TO DIRECTIVE 75/442/EEC.

WASTE DISPOSAL INSTRUCTIONS:

PREFERRED DISPOSAL METHODS FOR POLYMERS IN ORDER OF PREFERENCE ARE:

1) CLEAN AND REUSE IF POSSIBLE, 2) RECOVER AND RESELL THROUGH PLASTIC RECYCLERS OR RESIN BROKERS, 3) INCINERATE WITH WASTE HEAT RECOVERY AND 4) LANDFILL. REUSE, RECYCLING, STORING, TRANSPORTATION AND DISPOSAL MUST BE IN ACCORDANCE WITH APPLICABLE EU/NATIONAL AND LOCAL REGULATIONS. DO NOT ATTEMPT TO DISPOSE OF BY UNCONTROLLED INCINERATION. OPEN BURNING OF PLASTICS AT LANDFILLS IS NOT ACCEPTABLE.

SEE SECTION 7: HANDLING AND STORAGE AND SECTION 8:

EXPOSURE CONTROLS/PERSONAL PROTECTION FOR ADDITIONAL HANDLING INFORMATION THAT MAY BE APPLICABLE FOR SAFE HANDLING AND THE PROTECTION OF EMPLOYEES.

WASTE GENERATOR IS ADVISED TO CAREFULLY CONSIDER HAZARDOUS PROPERTIES AND CONTROL MEASURES NEEDED FOR OTHER MATERIALS THAT MAY BE FOUND IN THE WASTE.

## **SECTION 14 - TRANSPORT INFORMATION**

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG) CODE:

SHIPPING NAME:

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION.

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA) AND INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) INFORMATION SHIPPING NAME:

NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION.

US DOT INFORMATION:

SHIPPING NAME: NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION.

CANADIAN TDG INFORMATION:

SHIPPING NAME: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION.

## **SECTION 15 - REGULATORY INFORMATION**

EUROPEAN UNION REGULATORY INFORMATION:

THIS PRODUCT COMPLIES WITH THE REGISTRATION REQUIREMENTS OF THE REACH

REGULATION (EC) NO 1907/2006. THE COMPONENT SUBSTANCES HAVE BEEN DULY PREREGISTERED, REGISTERED OR ARE EXEMPT FROM REGISTRATION. THIS COVERS THOSE EU IMPORTERS INCLUDED IN NOVA CHEMICALS' ONLY REPRESENTATIVE SCHEME.

**LABEL INFORMATION:**

THIS PRODUCT IS A PREPARATION CONTAINING POLYMERS AND ADDITIVES. ALTHOUGH IT MAY CONTAIN COMPONENTS THAT MAY BE CLASSIFIED, THE PRODUCT DOES NOT PRESENT A DANGER TO HUMAN HEALTH BY INHALATION, INGESTION OR CONTACT WITH THE SKIN OR TO THE AQUATIC ENVIRONMENT IN THE FORM IN WHICH IT IS PLACED ON THE MARKET. BASED UPON ARTICLE 12 OF DIRECTIVE 1999/45/EC SUCH PREPARATIONS DO NOT REQUIRE LABELLING.

**OTHER INFORMATION:**

**A:**

**GENERAL PRODUCT INFORMATION:**

COMPONENTS OF THIS PRODUCT HAVE BEEN CHECKED AGAINST THE FOLLOWING CHEMICAL CONTROL INVENTORIES. COMPONENTS NOT IDENTIFIED ON EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS) ARE EXEMPT FROM THE LISTING (I.E. AS POLYMERS WHOSE MONOMERS ARE LISTED). CONSULT YOUR NOVA CHEMICALS' REPRESENTATIVE FOR FURTHER REGULATORY INFORMATION.

**B:**

**COMPONENT ANALYSIS - INVENTORY STATUS:**

COMPONENT CAS # US - TSCA CANADA - DSL EU - EINECS

POLYETHYLENE (ETHENE 9002-88-4 YES YES EXEMPT  
HOMOPOLYMER)

FLUX-CALCINED 68855-54-9 YES YES YES  
DIATOMACEOUS EARTH

TALC (HYDRATED 14807-96-6 YES YES YES  
MAGNESIUM SILICATE)

POLYETHYLENE (1-BUTENE, 25087-34-7 YES YES EXEMPT  
POLYMER WITH ETHENE)

POLYETHYLENE (1-HEXENE, 25213-02-9 YES YES EXEMPT  
POLYMER WITH ETHENE)

**CLP CLASSIFICATION:**

THIS PRODUCT IS NOT CLASSIFIED ACCORDING TO THE REGULATION (EC) NO. 1272/2008 ON CLASSIFICATION, LABELLING AND PACKAGING OF SUBSTANCES AND MIXTURES (CLP).

**SECTION 16 - OTHER INFORMATION**

INFORMATION OF IMPORTANCE FOR THE HEALTH AND SAFETY OF THE USER AND THE PROTECTION OF THE ENVIRONMENT FULL TEXT OF ANY R PHRASES REFERRED TO UNDER SECTION 2 AND 3:

R 49: MAY CAUSE CANCER BY INHALATION.

REFERENCES: AVAILABLE ON REQUEST.

SPECIAL CONSIDERATIONS:

EXPOSURE TO THE HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS AS DESCRIBED IN THE SDS, SECTIONS 5 AND 10 MAY BE LINKED WITH VARIOUS ACUTE AND CHRONIC HEALTH EFFECTS. THESE EFFECTS INCLUDE IRRITATION OF EYES AND UPPER RESPIRATORY TRACT PRIMARILY FROM THE ALDEHYDES, BREATHING DIFFICULTIES, SYSTEMIC TOXICITY SUCH AS LIVER, KIDNEY, AND CENTRAL NERVOUS SYSTEM EFFECTS.

NOVA CHEMICALS HAS MONITORED WORKER EXPOSURES TO EMISSIONS DURING COMMERCIAL-SCALE PROCESSING OF POLYETHYLENE. CONCENTRATIONS OF HAZARDOUS DECOMPOSITION PRODUCTS WERE DETERMINED TO BE WELL BELOW ESTABLISHED EXPOSURE LIMITS IN THE WORKPLACE. "QUANTITATION OF EMPLOYEE EXPOSURE TO EMISSION PRODUCTS GENERATED BY COMMERCIAL-SCALE PROCESSING OF POLYETHYLENE" IS AVAILABLE IN THE AM. IND. HYG. ASSOC. J. 56:809-814 (1995) AND "QUANTIFICATION OF EMISSION COMPOUNDS GENERATED DURING COMMERCIAL-SCALE PROCESSING OF ADVANCED SCLAIRTECH(TM) POLYETHYLENE" IS AVAILABLE IN THE JOURNAL OF PLASTIC FILM & SHEETING VOLUME 26 ISSUE 2, APRIL 2010.

FOR INFORMATION ON VENTILATION CONSIDERATIONS FOR THE CONTROL OF VOLATILE AIR CONTAMINANTS FROM POLYETHYLENE, PLEASE REQUEST A COPY OF NOVA CHEMICALS' PUBLICATION, "VENTILATION GUIDELINES FOR HEAT-PROCESSING POLYETHYLENE RESINS".

FOR ADDITIONAL INFORMATION ON UNLOADING HOPPER CARS CONTAINING PLASTIC RESINS, REFER TO NOVA CHEMICALS' PUBLICATION, "HOPPER CAR UNLOADING GUIDE".

FOR INFORMATION ON PROCESSING PROPERTIES, SELECTION OF NOVAPOL RESIN GRADES, REFER TO THE NOVAPOL PRODUCT DATA SHEETS AVAILABLE ON OUR WEB SITE, UNDER PRODUCTS & SERVICES: [HTTP://WWW.NOVACHEMICALS.COM](http://www.novachemicals.com).

FOR ADDITIONAL INFORMATION ON PREVENTING PELLET LOSS, REFER TO PUBLISHED PLASTIC INDUSTRY PUBLICATIONS AND RESOURCES UNDER 'OPERATION CLEAN SWEEP'; NOW DOWNLOADABLE FROM THE WEB AT [HTTP://WWW.OPCLEANSWEEP.ORG/](http://www.opcleansweep.org/).

POLYETHYLENE FINES AND DUST PARTICLES ARE LISTED AS A CLASS I COMBUSTIBLE DUST BY THE NATIONAL FIRE PROTECTION ASSOCIATION (SEE NFPA-68, TABLE F.1 (E)). FOR ADDITIONAL INFORMATION ON CONTROL OF STATIC AND MINIMIZING POTENTIAL DUST AND FIRE HAZARDS, REFER TO NFPA-654, "STANDARD FOR THE PREVENTION OF FIRE AND DUST EXPLOSIONS FROM THE MANUFACTURING, PROCESSING AND HANDLING OF COMBUSTIBLE PARTICULATE SOLIDS, 2006 EDITION".

FOR NOVAPOL RESIN GRADE SPECIFIC INFORMATION INCLUDING FOOD CONTACT COMPLIANCE STATEMENTS, PLEASE CONTACT YOUR SALES REPRESENTATIVE OR REFER TO NOVA CHEMICALS' POLYETHYLENE PRODUCT DATA SHEETS.

RECOMMENDED RESTRICTIONS ON USE: USE ONLY AS INTENDED.

KEY/LEGEND:

ACGIH = AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS

ADR = TRANSPORT OF DANGEROUS GOODS BY ROAD



ADR/RID = EUROPEAN AGREEMENT OF DANGEROUS GOODS BY ROAD/RAIL

BOD = BIOCHEMICAL OXYGEN DEMAND

CAS = CHEMICAL ABSTRACTS SERVICE

CEPA = CANADIAN ENVIRONMENTAL PROTECTION ACT

CERCLA = COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

CFR = CODE OF FEDERAL REGULATIONS

CPR = CONTROLLED PRODUCTS REGULATIONS

DFG = DEUTSCHE FORSCHUNGSGEMEINSCHAFT

DOT = DEPARTMENT OF TRANSPORTATION

DSL = DOMESTIC SUBSTANCES LIST

EC50 = EFFECTIVE CONCENTRATION 50%

EEC = EUROPEAN ECONOMIC COMMUNITY

EINECS = EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES

ELINCS = EUROPEAN LIST OF NOTIFIED CHEMICAL SUBSTANCES

EPA = ENVIRONMENTAL PROTECTION AGENCY

EU = EUROPEAN UNION

FDA = FOOD AND DRUG ADMINISTRATION

GHS = GLOBALLY HARMONIZED SYSTEM FOR THE CLASSIFICATION AND LABELLING OF CHEMICALS

HCS = HAZARD COMMUNICATION STANDARD

HMIS = HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

IARC = INTERNATIONAL AGENCY FOR RESEARCH ON CANCER

IATA = INTERNATIONAL AIR TRANSPORT ASSOCIATION

ICAO = INTERNATIONAL CIVIL AVIATION ORGANIZATION

IDL = INGREDIENT DISCLOSURE LIST

IDLH = IMMEDIATELY DANGEROUS TO LIFE OR HEALTH

IMDG = INTERNATIONAL MARITIME DANGEROUS GOODS

IMO = INTERNATIONAL MARITIME ORGANIZATION

ISHL = INDUSTRIAL SAFETY AND HEALTH LAW

KOW = OCTANOL/WATER PARTITION COEFFICIENT

LC50 = LETHAL CONCENTRATION 50%

LD50 = LETHAL DOSE 50%

LEL = LOWER EXPLOSIVE LIMIT

LFL = LOWER FLAMMABLE LIMIT

LLV = LEVEL LIMIT CEILING LIMIT (SWEDEN DUST)

MAK = MAXIMUM CONCENTRATION VALUE IN THE WORKPLACE

MITI = MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY

MSDS = MATERIAL SAFETY DATA SHEET

NAB = THRESHOLD VALUES (INDONESIA)

NCEC = NATIONAL CHEMICAL EMERGENCY CENTRE

NDSL = NON-DOMESTIC SUBSTANCES LIST

NFPA = NATIONAL FIRE PROTECTION ASSOCIATION

NIOSH = NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

NJTSR = NEW JERSEY TRADE SECRET REGISTRY

NTP = NATIONAL TOXICOLOGY PROGRAM

OEL = OCCUPATIONAL EXPOSURE LIMIT

OSHA = OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

PEL = PERMISSIBLE EXPOSURE LIMIT

PNOC = PARTICULATES NOT OTHERWISE CLASSIFIED

PPE = PERSONAL PROTECTIVE EQUIPMENT

PRTR = DESIGNATED CHEMICAL SUBSTANCE LAW (JAPAN)

PSD = SHORT TERM EXPOSURE LIMIT (INDONESIA)

RCRA = RESOURCE CONSERVATION AND RECOVERY ACT

REACH = REGISTRATION, EVALUATION, AUTHORISATION AND RESTRICTION OF CHEMICAL SUBSTANCES

REL = RECOMMENDED EXPOSURE LIMIT

RID = TRANSPORT OF DANGEROUS GOODS BY RAIL

SARA = SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

SCBA = SELF CONTAINED BREATHING APPARATUS

SDS = SAFETY DATA SHEET

SEPA = STATE ENVIRONMENTAL PROTECTION ADMINISTRATION

STEL = SHORT TERM EXPOSURE LIMIT

TDG = TRANSPORTATION OF DANGEROUS GOODS

TLV = THRESHOLD LIMIT VALUE

TSCA = TOXIC SUBSTANCES CONTROL ACT

TWA = TIME WEIGHTED AVERAGE

UEL = UPPER EXPLOSIVE LIMIT

UFL = UPPER FLAMMABLE LIMIT

VLA-ED = VALOR LIMITE AMBIENTAL DE EXPOSICION DIARIA (ENVIRONMENTAL EXPOSURE DAILY LIMIT VALUE)

VME = VALEUR LIMITE D'EXPOSITION (OCCUPATIONAL EXPOSURE LIMITS)

WHMIS = WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEMS

SAFETY DATA SHEET PREPARED BY: NOVA CHEMICALS

SAFETY DATA SHEET INFORMATION PHONE NUMBER: +1-412-490-4063

OTHER INFORMATION:

NOTICE TO READER:

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