



SAFETY DATA SHEET

HOUGHTON®

Revision Date 05-04-2018

Version 6

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Code(s) 21421400-M
Product Name RUST VETO 4214

Recommended Use Rust Preventative
Uses advised against Any other purpose.

Manufacturer, Importer, Supplier

Houghton International Inc.
Madison & Van Buren Aves.
Valley Forge, PA 19482
Telephone: 610-666-4000 FAX: 610-666-1376
Website: www.houghtonintl.com
Customer Service: 888-459-9844

Houghton Canada
915 Meyerside Drive
Mississauga
ON
L5T 1R8

Houghton Mexico S.A. de C.V.
Efraín Gonzalez Luna, 2007 Depto19
Col. Americana, Guadalajara,
Jalisco CP. 44160,
Mexico
Phone: +52-333-615-9331

Emergency telephone number

United States of America/Canada : 3E Company - 1-866-519-4752 (Code 333938)

Mexico : 3E Company - +52 55 41696225 (Code 333938)

SECTION 2: HAZARDS IDENTIFICATION

Classification

This product is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Workplace Hazardous Materials Information System (WHMIS) 2015

Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 3

Label elements

Signal word
DANGER

Hazard statements

May cause drowsiness or dizziness
May be fatal if swallowed and enters airways
Flammable liquid and vapor



Precautionary Statements

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Keep container tightly closed
 Ground/Bond container and receiving equipment
 Use explosion-proof electrical/ventilating/lighting/./? /equipment
 Use only non-sparking tools
 Take precautionary measures against static discharge
 Wear protective gloves/protective clothing/eye protection/face protection
 Keep cool

Precautionary Statements - Response

Skin

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Call a POISON CENTER or doctor/physician if you feel unwell

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Do NOT induce vomiting

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Health Not Applicable.
Physical Not Applicable.

Other Information

Prolonged skin contact may defat the skin and produce dermatitis
 Repeated exposure may cause skin dryness or cracking

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture. Health hazard information is based on its ingredients.

Chemical name	CAS No	Weight-%
Distillates (petroleum), hydrotreated light	64742-47-8	80% - 100%
Highly refined, low viscosity mineral oils/hydrocarbons (Viscosity >7 - <20.5 cSt @40°C)	-	1% - 5%
Paraffin waxes (petroleum), hydrotreated	64742-51-4	1% - 5%
Highly refined base oil (Viscosity >20.5 cSt @40°C)	-	1% - 5%
Barium bis(dinonylnaphthalenesulphonate)	25619-56-1	1% - 5%

2-(2-Butoxyethoxy)ethanol	112-34-5	1% - 5%
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The exact percentage (concentration) of composition has been withheld as a trade secret.

Product containing mineral oil with less than 3% DMSO extract as measured by IP 346. See Section 15 for additional information on base oils.

SECTION 4: FIRST AID MEASURES

Description of first-aid measures

General advice	Immediate medical attention is required. Do not get in eyes, on skin, or on clothing. Do not breathe dust/fume/gas/mist/vapors/spray.
Inhalation	Move to fresh air. Potential for aspiration if swallowed. Get medical attention immediately if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use.
Eye contact	Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.
Ingestion	Do not induce vomiting without medical advice. Clean mouth with water and afterwards drink plenty of water. Aspiration hazard if swallowed - can enter lungs and cause damage. If symptoms persist, call a physician.
Protection of First-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation.

Most important symptoms and effects, both acute and delayed

Main Symptoms May be fatal if swallowed and enters airways

Indication of immediate medical attention and special treatment needed

Notes to physician Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.; Use CO2, dry chemical, or foam, Water spray or fog, Cool containers / tanks with water spray

Extinguishing media which shall not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire

Special hazards arising from the substance or mixture

Special Hazard

In the event of fire and/or explosion do not breathe fumes. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). Flammable. Risk of ignition. Thermal decomposition can lead to release of irritating gases and vapors. This material creates a fire hazard because it floats on water.

Hazardous decomposition products

Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide

Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full

protective gear

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Remove all sources of ignition.

Advice for non-emergency personnel Material can create slippery conditions. Eliminate all ignition sources if safe to do so. Evacuate personnel to safe areas.

Advice for emergency responders For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Dike to collect large liquid spills. After cleaning, flush away traces with water.

Reference to other sections

See Section 8/12/13 for additional information

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure adequate ventilation. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Remove all sources of ignition. Keep away from open flames, hot surfaces and sources of ignition.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of the reach of children.

Recommended Shelf Life

Shelf life 12 months.

Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases

Specific end uses

Specific use(s) Rust Preventative

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Legend:

(s) - Skin; TWA - Time-Weighted Average; STEL - Short Term Exposure Limit; Ceiling - Ceiling Value; TLV® - Threshold Limit Value; PEL (Permissible Exposure Limit); IDLH (immediately dangerous to life and health); WEEL (Workplace Environmental Exposure Level Guides)

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH	AIHA WEEL
Distillates (petroleum), hydrotreated light 64742-47-8	5 mg/m ³ (mist)	5 mg/m ³ (mist)		
Highly refined, low viscosity mineral oils/hydrocarbons (Viscosity >7 - <20.5 cSt @40°C) -	5 mg/m ³ (mist)	5 mg/m ³ (mist)		
Paraffin waxes (petroleum), hydrotreated 64742-51-4	5 mg/m ³ (mist)	5 mg/m ³ (mist)		
Highly refined base oil (Viscosity >20.5 cSt @40°C) -	5 mg/m ³ (mist)	5 mg/m ³ (mist)		
Barium bis(dinonylnaphthalenesulphonate) 25619-56-1	TWA: 0.5 mg/m ³ - [Ba]	TWA: 0.5 mg/m ³ - [Ba]	IDLH: 50 mg/m ³ - [Ba] TWA: 0.5 mg/m ³	
2-(2-Butoxyethoxy)ethanol 112-34-5	TWA: 10 ppm (inhalable fraction and vapor)			

OSHA - Occupational Safety and Health Administration of the US Department of Labor
ACGIH - American Conference of Governmental Industrial Hygienists
NIOSH - National Institute for Occupational Safety and Health

Hydrocarbon solvent vapor mixtures which do not have substance specific occupational exposure limits may be evaluated by the Reciprocal Calculation Procedure (RCP) which assigns a recommended occupational exposure limit based on the mass composition and hydrocarbon group guidance values (GGVs). Applicable recommended occupational exposure limits are shown in the table below.

Chemical name	RCP OEL	Manufacturer
Distillates (petroleum), hydrotreated middle 64742-46-7	RCP: TWA 1200 mg/m ³ 143ppm	

Exposure controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection Safety glasses with side-shields.
Skin and body protection Wear protective gloves/clothing.
Respiratory protection No special protective equipment required. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Hygiene measures Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state liquid
Appearance clear amber
Odor Characteristic
Odor threshold Not Determined

Property Values Remarks
pH Not applicable

Melting point / freezing point	Not Determined	
Boiling point / boiling range	Not Determined	
Flash point	40 °C / 104 °F	ASTM D 93
Evaporation rate	Not Determined	
Flammability (solid, gas)	Not Determined	
Flammability Limit in Air		
Upper flammability limit:	Not Determined	
Lower flammability limit:	Not Determined	
Vapor pressure	Not Determined	
Vapor density	Not Determined	
Relative density	= 0.8	g/cm3 @15.5°C
Solubility(ies)	Insoluble in water	
Partition coefficient	Not Determined	
Autoignition temperature	Not Determined	
Decomposition temperature	Not Determined	
Kinematic viscosity	< 3 cSt @ 40 °C	ASTM D 445
Explosive properties	Not applicable	
Oxidizing Properties	Not applicable	

Other Information

Viscosity, kinematic (100°C)	Not Determined
Pour Point	Not Determined
VOC Content (ASTM E-1868-10)	Not Determined
VOC content	Not Determined

SECTION 10: STABILITY AND REACTIVITY**Reactivity**

None under normal use conditions

Chemical stability

Stable under normal conditions

Possibility of hazardous reactions

None under normal use conditions

Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition, Heat (temperatures above flash point), sparks, ignition points, flames, static electricity, Heat, flames and sparks

Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases

Hazardous decomposition products

Incomplete combustion and thermolysis produces potentially toxic gases such as carbon monoxide and carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information May be harmful if swallowed and enters airways.

Inhalation Risk of serious damage to the lungs (by aspiration); Vapors may cause drowsiness and

Eye contact	dizziness
Skin contact	Based on available data, the classification criteria are not met
Ingestion	Based on available data, the classification criteria are not met Risk of product entering the lungs on vomiting after ingestion

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Distillates (petroleum), hydrotreated light 64742-47-8	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Highly refined, low viscosity mineral oils/hydrocarbons (Viscosity >7 - <20.5 cSt @40°C) -	>2000 mg/kg	>2000 mg/kg	
Paraffin waxes (petroleum), hydrotreated 64742-51-4	10000 mg/kg (Rat)	> 3600 mg/kg (Rabbit)	
Highly refined base oil (Viscosity >20.5 cSt @40°C) -	>2000 mg/kg	>2000 mg/kg	
Barium bis(dinonylnaphthalenesulphonate) 25619-56-1	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 21 mg/l (1h) (Rat)
2-(2-Butoxyethoxy)ethanol 112-34-5	3384 mg/kg (Rat)	= 2700 mg/kg (Rabbit)	

Information on toxicological effects

Symptoms	May be fatal if swallowed and enters airways. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged skin contact may defat the skin and produce dermatitis.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met
Sensitization	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure)	Based on available data, the classification criteria are not met.
Aspiration hazard	Risk of serious damage to the lungs (by aspiration).

SECTION 12: ECOLOGICAL INFORMATION**Ecotoxicity**

No special environmental measures are necessary

Chemical name	Algae/aquatic plants	Fish	Crustacea
Distillates (petroleum), hydrotreated light	1000: 72 h Pseudokirchneriella subcapitata mg/L EC50	1000: 96 h Oncorhynchus mykiss mg/L LC50	1000: 48 h Daphnia magna mg/L EC50
2-(2-Butoxyethoxy)ethanol	100: 96 h Desmodesmus subspicatus mg/L EC50	1300: 96 h Lepomis macrochirus mg/L LC50 static	2850: 24 h Daphnia magna mg/L EC50 100: 48 h Daphnia magna mg/L EC50

Persistence and degradability The product is not readily biodegradable, but it can be degraded by micro-organisms, it is regarded as being inherently biodegradable.

Bioaccumulation No information available

Mobility The product is insoluble and floats on water. Is not likely mobile in the environment due its low water solubility.

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods Dispose of in accordance with federal, state and local regulations.

Contaminated packaging Observe all label precautions until container is cleaned, reconditioned or destroyed.

SECTION 14: TRANSPORT INFORMATION

DOT Not regulated (If shipped in NON BULK packaging by ground transport)
UN/ID no NA1993
Proper shipping name COMBUSTIBLE LIQUID, N.O.S.
Hazard Class Combustible Liquid
Packing Group III
Emergency Response Guide Number 128
Description NA1993, COMBUSTIBLE LIQUID, N.O.S (DISTILLATES (PETROLEUM), HYDROTREATED LIGHT), COMBUSTIBLE LIQUID, III

TDG
UN/ID no UN1268
Proper shipping name PETROLEUM DISTILLATES, N.O.S.
Hazard Class 3
Packing Group III
Description UN1268, PETROLEUM DISTILLATES, N.O.S., 3, III

MEX
UN/ID no UN1268
Proper shipping name PETROLEUM DISTILLATES, N.O.S.
Hazard Class 3
Packing Group III
Description UN1268, PETROLEUM DISTILLATES, N.O.S., 3, III

IATA
UN/ID no UN1268
Proper shipping name PETROLEUM DISTILLATES, N.O.S.
Hazard Class 3
Packing Group III
ERG Code 3L

Description UN1268, PETROLEUM DISTILLATES, N.O.S., 3, III

IMDG

UN/ID no UN1268
Proper shipping name PETROLEUM DISTILLATES, N.O.S.
Hazard Class 3
Packing Group III
EmS-No F-E, S-E
Vessel Stowage Location Code A
Description UN1268, PETROLEUM DISTILLATES, N.O.S., 3, III, (40°C c.c.)

SECTION 15: REGULATORY INFORMATION**International Inventories**

Inventory information may be utilizing alternative CAS#s or exemptions beyond those stated within this document For further information, please contact: ProductStewardship@houghtonintl.com

TSCA	Complies
DSL	Complies
AICS	Complies
PICCS	Complies
KECL	Complies
IECSC	Complies
ENCS	Complies
TCSI	Complies
NZIoC	Does not Comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
AICS - Australian Inventory of Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
ENCS - Japan Existing and New Chemical Substances
TCSI - Taiwan National Existing Chemical Inventory
NZIoC - New Zealand Inventory of Chemicals

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS No	SARA 313 - Threshold Values %
2-(2-Butoxyethoxy)ethanol	112-34-5	1.0

SARA 311/312 Hazard Categories

- Flammable (gases, aerosols, liquids, or solids)
- Specific target organ toxicity (single or repeated exposure)
- Aspiration Hazard

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this

regulation, Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

SCAQMD Rule 1144

This product has not been tested for VOC content by the ASTM E-1868-10 method and is not approved for sale or distribution in the SCAQM District of California if the product is used as a metal forming, metal removal, metal treating, metal protection fluid or as a direct-contact lubricant.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

International Regulations

Ozone-depleting substances (ODS)

Not applicable

Persistent Organic Pollutants

Not applicable

Chemicals Subject to Prior Informed Consent (PIC)

Not applicable

Other Information

Not applicable

The highly refined base oil (Viscosity >20.5 cSt @40°C) contains one or more substance with the following CAS/EC numbers/REACH registration numbers:

Chemical name	CAS No
Lubricating oils (petroleum), C24-50, solvent-extd., dewaxed, hydrogenated	101316-72-7
Lubricating oils (petroleum), used, noncatalytically refined	101316-73-8
Distillates (petroleum), solvent-refined heavy paraffinic	64741-88-4
Residual oils (petroleum), solvent-refined	64742-01-4
Extracts (petroleum), residual oil solvent	64742-10-5
Distillates (petroleum), hydrotreated heavy naphthenic	64742-52-5
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Residual oils (petroleum), hydrotreated	64742-57-0
Lubricating oils (petroleum), hydrotreated spent	64742-58-1
Residual oils (petroleum), solvent-dewaxed	64742-62-7
Distillates (petroleum), solvent-dewaxed heavy, paraffinic	64742-65-0
Paraffin oils (petroleum), catalytic dewaxed heavy	64742-70-7
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0
Lubricating oils (petroleum), C20-C50, hydrotreated neutral oil-based	72623-87-1
Lubricating oils	74869-22-0
Paraffin oils	8012-95-1
White mineral oil (petroleum)	8042-47-5
C18-C50 branched, cyclic and linear hydrocarbons – Distillates	848301-69-9

The highly refined, low viscosity mineral oils/hydrocarbons (Viscosity >7 - <20.5 cSt @40°C) contains one or more substance with the following CAS/EC numbers/REACH registration numbers:

Chemical name	CAS No
Distillates (petroleum), straight-run middle	64741-44-2
Distillates (petroleum), heavy hydrocracked	64741-76-0
Distillates (petroleum), solvent-refined light paraffinic	64741-89-5
Distillates (petroleum), hydrotreated middle	64742-46-7
Distillates (petroleum), hydrotreated middle	64742-46-7

Distillates (petroleum), hydrotreated light	64742-47-8
Distillates (petroleum), hydrotreated light naphthenic	64742-53-6
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7
Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
Distillates, petroleum, solvent-dewaxed light paraffinic	64742-56-9
Distillates (petroleum), solvent-dewaxed heavy, paraffinic	64742-65-0
Paraffin oils (petroleum), catalytic dewaxed light	64742-71-8
Lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0
Lubricating oils (petroleum), C20-C50, hydrotreated neutral oil-based	72623-87-1
White mineral oil (petroleum)	8042-47-5
C18-C50 branched, cyclic and linear hydrocarbons – Distillates	848301-69-9
Hydrocarbons, C14-C19, isoalkanes, cyclics, <2% aromatics	NOT AVAILABLE

SECTION 16: OTHER INFORMATION

NFPA **Health hazards** 2 **Flammability** 2 **Instability** 0 **Physical and chemical properties** -

Key or legend to abbreviations and acronyms used in the safety data sheet

STOT SE - Specific target organ systemic toxicity (Single exposure)
 STOT RE - Specific target organ systemic toxicity (repeated exposure)
 VOC - Volatile organic compounds

Revision Date 05-04-2018

Revision Note This SDS has been revised in the following section(s), 2, 3, 8, 11

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Manufacturers Name and Address:

Baltimore Tool Works, Inc.
1110 Race Street
Baltimore, Maryland 21230

Date of Preparation:

May 21, 1986

Name and Title of Contact Person:

H.D. McCarty, President

Telephone No.:

301-752-5297

Emergency Telephone No.:

301-752-5297

Product Name:

Hand Tools

Chemical Names:

AISI-C1095 Steel Bars

Trade Names:

BALTIMORE

Chemical Composition:

<u>Component</u>	<u>CAS #</u>	<u>% Weight</u>	<u>Health Hazard or Nuisance Products (Fume Components)</u>	<u>OSHA Permissible Exposure Limits For Fumes</u>	<u>ACGIH Threshold Limit Value</u>
Iron	1309-37-1	97-99	Iron Oxide Fume	10 mg/m ³	5 mg/m ³
Carbon	7440-44-0	.96	None Listed	--	--
Manganese	7439-96-5	.40	Managanese	5 mg/m ³	1 mg/m ³
Phosphorus (Maximum)	7723-14-0	.012	Phosphorus (Yellow)	0.1 mg/m ³	0.1 mg/m ³
Sulfur (Maximum)	7704-34-9	.029	Sulfur Dioxide	5 ppm	2 ppm
Silicon	7740-21-3	.20	Silicon	--	5 mg/m ³

Coating

None

Note: At room temperature, this product does not pose a health hazard. However, welding, cutting, grinding, sawing or burning may generate the health hazards or nuisances listed above.

Chemical and Physical Properties

Physical State: Solid
Appearance: Gray or Black
(may be coated)
Odor: None
Boiling Point: N/A
Melting Point: N/A
Vapor Pressure: N/A
Vapor Density: N/A
Evaporation Rate: N/A
Solubility in
Water: N/A
ph: N/A

Personal Protective Equipment/Measures

Respiratory Equipment: Any NIOSH approved dust/mist/fume should be used if OSHA PEL is exceeded, and is recommended when this product is being heated. Respirators are considered insufficient protection against carbon monoxide fumes.
Protective Clothing: Varies according to use.
Gloves: Refer to local, state and federal codes for selection. Required for welding, brazing, cutting or other heating operations.
Eye Protection:
Ventilation Requirements
Other: As per welding requirements.

Fire and Explosion Hazard Data

Ignition Temperature: N/A
Flash Point: N/A
Upper Explosive Limit: N/A
Lower Explosive Limit: N/A
Extinguishing Media: N/A
Special Fire Fighting Procedures: N/A

Reactivity Data

Stability: Stable
Incompatibilities: None
Hazardous Polymerization: Does not occur
Decomposition Products: Iron oxide, manganese, phosphorus (yellow), sulfur dioxide, silicon

Route of Exposure:

Inhalation

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Effects of Overexposure: - (Acute and chronic)

Iron (Iron Oxide) - Metallic taste, irritation of eyes, nose and throat, metal fume fever, pulmonary effects, siderosis.

Manganese - Metal fume fever, dry throat, tight chest, coughing, loss of strength, insomnia, shortness of breath, low back pain, vomiting, fatigue, bronchitis, pneumonitis, loss of coordination, Parkinson's disease.

Phosphorus (Yellow) - Eye and respiratory irritation, abdominal pain, nausea, jaundice, dental pain, jaw pain, salivation, eye and skin burns, anemia, physical wasting.

Sulfur (Sulfur Dioxide) - Irritation to eyes, nose and throat, runny nose, bronchial constriction, eye and skin burns.

Silicon - Coughing.

Carcinogenicity: None Known

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First Aid:

Move victim to fresh air, wash eyes, apply artificial respiration, and seek a physician's help, as required.

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Spill and Leak Response:

Clean Up: N/A
Disposal: Recycle as scrap metal (nonhazardous under RCRA as sold)

Precautions For Safe Handling and Use:

Welding, Cutting, etc.: This operation should be performed in areas with adequate ventilation and appropriate respiratory protection.
Handling & Storage: N/A
Other Precautions: N/A

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Adequate ventilation and/or respiratory protection should be provided if exposure limits in chemical composition section are exceeded.

Use good housekeeping practices to prevent accumulations of dust and to keep airborne dust concentrations to a minimum.

All information, recommendations, and suggestions contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made by Baltimore Tool Works, Inc. with respect to the information provided.

Employers should use this information only as a supplement to other information gathered by them. Since the actual use of this product is beyond our control, and it is each employer's responsibility to assure the safety and health of their employees, Baltimore Tool Works, Inc. will not assume liability arising out of the use of this product by others.

This data sheet is provided by Baltimore Tool Works, Inc. to inform users of hazards associated with this product, so that appropriate protective measures may be taken. The data herein is based primarily upon information provided by the suppliers of the raw material and chemicals used in the manufacture of this product and the NIOSH/OSHA Pocket Guide to Chemical Hazards. The product data protective measures indicated are not necessarily the sum total of all protective measures or data. Baltimore Tool Works, Inc. makes no warranty with respect to the accuracy of the information provided by their suppliers or NIOSH/OSHA and disclaims all liability or reliance thereof.



Du Pont
Material Safety Data Sheet

"ZYTEL" NYLON RESINS IN SYNONYM LIST ZYT002
PL00A402 Revised 13-Jul-05 Printed 07/14/2005

Substance ID :150000000692

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

"ZYTEL" is a registered trademark of DuPont.

Tradenames and Synonyms

- "ZYTEL" 80G25HS BK117;
"ZYTEL" 80G33HS1L BK104, 80G33HS1L BK104W,
"ZYTEL" 80G33HS1L BKB010, 80G33HS1L NC010,
"ZYTEL" 80G33HS1L NC010W;
"ZYTEL" 80G33L BKB151, 80G33L NC010;
"ZYTEL" 80G43HS1L BK104, 80G43HS1L BKB010,
"ZYTEL" FE380005 BK151,
"ZYTEL" FE380006 BKB521, #

Company Identification

MANUFACTURER/DISTRIBUTOR
E.I. du Pont Canada Company
P.O. Box 2200
Streetsville
Mississauga, Ontario L5M 2H3

PHONE NUMBERS

Product Information : 1-800-387-2122
Medical Emergency : 1-800-441-3637 (24 hours)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Table with 3 columns: Material, CAS Number, %

Components (Remarks)

Material is not known to contain Toxic Chemicals under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

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Additives in this product do not present a respiration hazard unless the product is ground to a powder of respirable size and the dust is inhaled. All dusts are potentially injurious to the respiratory tract if respirable particles are generated and inhaled in sufficiently high concentrations. Good industrial hygiene practices, as with all dusts, should include precautions to prevent inhalation of respirable particles.

HAZARDS IDENTIFICATION

Potential Health Effects

ADDITIONAL HEALTH EFFECTS

Read "ZYTEL" Molding Guide before using this product.

POLYHEXAMETHYLENE ADIPAMIDE (Nylon 66)

In general, skin irritation has not been produced in human patch tests with Nylon 66. However, a small percentage of subjects may respond to prolonged contact with redness of skin. Significant skin permeation, and systemic toxicity, after contact appears unlikely. There are no reports of human sensitization.

If particles of Nylon 66 contact the eye, mechanical irritation with tearing, pain or blurred vision may result.

GLASS FIBER

The mechanical action of the sharp fibers from Fiber Glass may cause skin irritation with discomfort or rash.

Eye contact with Fiber Glass particles may cause mechanical eye irritation with discomfort, tearing, or blurring of vision.

Inhalation of Fiber Glass particles may cause irritation of the upper respiratory passages, with coughing and discomfort.

Results from epidemiology studies suggest no causal relationship between Fiber Glass exposure and cancer. One epidemiology study does indicate a slight increase in lung cancer deaths. The evidence that fiber glass is related to these increased lung cancer deaths is considered weak.

Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures.

CARBON BLACK

Immediate effects of overexposure to Carbon Black by inhalation may include irritation of the nose, throat, and lungs with cough, difficulty breathing or shortness of breath.

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If particles from Carbon Black contact the eye, mechanical irritation with tearing, pain or blurred vision may result.

Significant skin permeation, and systemic toxicity, after contact with Carbon Black appears unlikely. There are no reports of human sensitization.

Epidemiologic studies demonstrate no significant risk of human cancer from exposure to Carbon Black. While some reports cite an increased incidence of pulmonary abnormalities, such as decreased pulmonary function and radiological changes among Carbon Black workers, other reports show no correlation between exposure and effects on pulmonary function or disease.

Increased susceptibility to the effects of Carbon Black may be observed in persons with pre-existing disease of the lungs.

Carcinogenicity Information

The following components are listed by IARC, NTP, OSHA or ACGIH as carcinogens.

Material	IARC	NTP	OSHA	ACGIH
CARBON BLACK	2B			

FIRST AID MEASURES

First Aid

INHALATION

No specific intervention is indicated as the compound is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed to fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical treatment for thermal burn.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

No specific intervention is indicated as compound is not likely to be hazardous by ingestion.

FIRE FIGHTING MEASURES

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Flammable Properties

Flash Point : Not Applicable

Fire and Explosion Hazards:

Hazardous gases/vapors produced in fire are ammonia, carbon monoxide, traces of hydrogen cyanide, and, aldehydes.

Extinguishing Media

Water, Foam, Dry Chemical, CO2.

Fire Fighting Instructions

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Spilled material is a slipping hazard.

Spill Clean Up

Recover undamaged and minimally contaminated material for reuse and reclamation. Shovel or sweep up.

HANDLING AND STORAGE

Storage

Keep containers tightly closed to prevent moisture absorption and contamination.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

VENTILATION When hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting or grinding operations with this material, use local exhaust to control the concentration of dust below exposure limits.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye and face contact due to splashing or spraying of molten material. A full face mask respirator provides protection from eye irritation.

RESPIRATORS

A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge with a dust/mist filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

During grinding, sanding, or sawing operations use a NIOSH/MSHA approved air purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

PROTECTIVE CLOTHING

If there is potential contact with hot/molten material, wear heat resistant clothing and footwear.

Wear leather or cotton gloves when sawing, routing, drilling or sanding.

Exposure Guidelines

Exposure Limits

"ZYTEL" NYLON RESINS IN SYNONYM LIST ZYT002

PEL (OSHA) : Particulates (Not Otherwise Regulated)
15 mg/m³, 8 Hr. TWA, total dust
5 mg/m³, 8 Hr. TWA, respirable dust

Other Applicable Exposure Limits

POLYHEXAMETHYLENE ADIPAMIDE (Nylon 66)

PEL (OSHA) : None Established
TLV (ACGIH) : None Established
AEL * (DuPont) : 10 mg/m³, 8 Hr. TWA, total dust
5 mg/m³, 8 Hr. TWA, respirable dust

GLASS FIBER

PEL (OSHA) : None Established
TLV (ACGIH) : 5 mg/m³, 8 Hr. TWA, inhalable particulate

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AEL * (DuPont)	: A4 5 mg/m ³ total dust - 8 Hr. TWA, non-respirable fiber (> 3 microns in diameter) non-fibrous particulate.
CARBON BLACK	
PEL (OSHA)	: 3.5 mg/m ³ , 8 Hr. TWA
TLV (ACGIH)	: 3.5 mg/m ³ , 8 Hr. TWA, A4
AEL * (DuPont)	: 0.5 mg/m ³ , 8 & 12 Hr.TWA, (Polynuclear Aromatic Hydrocarbon Content <0.1%) Includes Channel, Lamp, and Thermal Black

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Melting Point	: >200 C (>392 F)
Solubility in Water	: Insoluble
Odor	: None
Form	: Pellets.
Specific Gravity	: >1
Color	: Black, Brown, Gray, Natural Color.

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Conditions to Avoid

Temperatures above 340 C (644 F) .

Incompatibility with Other Materials

Incompatible or can react with strong acids, strong oxidizers.

Decomposition

HAZARDOUS DECOMPOSITION PRODUCTS - cyclopentanone, carbon monoxide, aldehydes.

Polymerization

Polymerization will not occur.

TOXICOLOGICAL INFORMATION

Animal Data

Nylon 66

Oral LD50, rat: > 10,000 mg/kg

Nylon 66 is not a skin irritant in tests with animals.

Single exposure by ingestion to high doses caused decreased body weight. Long-term exposure caused no significant toxicological effects.

Repeated inhalation exposure caused histopathological changes of the lungs, and kidneys.

In animal testing Nylon 66 has not caused carcinogenicity. No animal data are available to define developmental, reproductive or mutagenic hazards.

Fiber Glass

Skin irritation and mild eye irritation occurs in animals, but these effects are attributed primarily to mechanical damage rather than a chemical effect.

The effects in mice from single exposure by intratracheal instillation with Fiber Glass include an inflammatory response. Repeated inhalation exposures invoked pulmonary macrophage reactions similar to biologically inert dusts.

Tests in some animals with Fiber Glass demonstrate carcinogenic activity. However, these studies were by artificial implantation or injection of fine glass fibers into the chest, abdominal cavity, or trachea and are judged to be irrelevant to industrial exposure. Chronic inhalation exposure of animals to fiber glass at low concentrations produced minimal fibrosis in one study and no adverse effects in a different study.

No animal test reports are available to define mutagenic, developmental, or reproductive hazards.

Carbon Black

Oral ALD, rat: > 25,100 mg/kg

Repeated inhalation exposure of animals to Carbon Black caused inflammation of the respiratory tract, lungs and emphysema.

Repeated exposure to high doses of Carbon Black by ingestion or skin contact caused no significant toxicological effects.

No adequate studies have been conducted in animals to define the carcinogenicity of Carbon Black by ingestion. In several skin

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painting studies using various Carbon Blacks no carcinogenicity was observed. Tests by inhalation for carcinogenicity in rats show significant increases in lung tumors in female rats but not male rats. In another study using female mice exposed by inhalation to Carbon Black there was no increase in the incidence of respiratory tract tumors. Researchers conducting the rat inhalation studies believe that these effects probably result from the massive accumulation of small dust particles in the lung which overwhelm the normal lung clearance mechanisms. This represents "lung overload" phenomenon, rather than a specific chemical effect of the dust particle in the lung.

Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures. Tests in animals for genetic toxicity have produced mostly negative results. No animal data are available to define developmental or reproductive toxicity.

ECOLOGICAL INFORMATION

Ecotoxicological Information

AQUATIC TOXICITY:

No information is available. Toxicity is expected to be low based on insolubility in water. Do not discharge to streams, ponds, lakes or sewers.

DISPOSAL CONSIDERATIONS

Waste Disposal

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled, but incinerator must be capable of scrubbing out acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

TRANSPORTATION INFORMATION

Shipping Information

Not regulated in transportation by DOT/IMO/IATA.

Shipping Information -- Canada

This material is Not Regulated.

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REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : In compliance with TSCA Inventory requirements for commercial purposes.

State Regulations (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

SUBSTANCES ON THE PENNSYLVANIA HAZARDOUS SUBSTANCES LIST PRESENT AT A CONCENTRATION OF 1 % OR MORE (0.01% FOR SPECIAL HAZARDOUS SUBSTANCES)- Carbon black.

WARNING - SUBSTANCES KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM- None.

The State of California, under Proposition 65, regulates Carbon Black - airborne, unbound particles of respirable size as a carcinogen. In this product, carbon black is not supplied in the form regulated in California.

SUBSTANCES ON THE NEW JERSEY WORKPLACE HAZARDOUS SUBSTANCE LIST PRESENT AT A CONCENTRATION OF 1% OR MORE (0.1% FOR SUBSTANCES IDENTIFIED AS CARCINOGENS, MUTAGENS OR TERATOGENS)- Carbon black.

Canadian Regulations

WHMIS Classification:

This is not a WHMIS Controlled Product.

CEPA Status : DSL: REPORTED/INCLUDED.

OTHER INFORMATION-----
Additional Information

MEDICAL USE: CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications see DuPont CAUTION Bulletin No. H-50102.

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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Responsibility for MSDS

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(Continued)

POLYMERS E.I. du Pont Canada Company
Box 2200, Streetsville
Mississauga, Ontario, L5M 2H3
(905) 821-3300.

End of MSDS

MATERIAL SAFETY DATA SHEET

325-89

Revision Date: 3/6/03

1. MANUFACTURER AND PRODUCT INFORMATION

Sinclair & Rush, Inc.
123 Manufacturers Drive
Arnold, MO 63010
636-282-6800

HMIS Ratings:
Health 1
Flammability 1
Reactivity 0
Personal Protection B

Product Identification: 325-89
Description: Textured Black Plastisol

24 -Hour Emergency #: 1-800-424-9300 (CHEMTREC)

2. HAZARDOUS INGREDIENTS

This product does not contain any hazardous components at or above reportable levels.
This product does not contain any toxic chemicals subject to the reporting requirements of Section 313 of Title III, or of 40 CFR Part 372.

3. PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance and Odor: Liquid, mild odor	Solubility in Water: Insoluble
Boiling Point: N/A	Specific Gravity: 1.2
Vapor Pressure: Unknown	Melting Point: N/A
Vapor Density: Unknown	Evaporation Rate: Unknown

4. HEALTH HAZARD DATA

Routes of Entry:

Inhalation:	Fumes emitted during the fusion process can cause respiratory tract irritation.
Ingestion:	May be harmful if swallowed.
Skin Contact:	May cause skin irritation.
Eye Contact:	May cause eye irritation.

5. FIRST AID PROCEDURES

Inhalation:	Remove to fresh air. Seek medical attention if necessary.
Ingestion:	May be necessary to induce vomiting - seek medical advice.
Skin Contact:	Wash thoroughly with soap and water.
Eye Contact:	Rinse eyes with water for at least 15 minutes. Seek medical attention if necessary.

6. FIRE AND EXPLOSION HAZARD DATA

Flash Point:	N/A
Flammable Limits:	N/A
Extinguishing Media:	CO ₂ , foam, dry chemical, water spray.
Special Fire Fighting Procedures:	Self-contained breathing apparatus should be worn to avoid inhalation of smoke.
Unusual Fire and Explosion Hazards:	Hydrogen chloride may be generated upon combustion of material. Extreme heat can cause pressure buildup in closed containers, which may lead to rupture or explosion.

7. REACTIVITY DATA

Stability:	Stable
Hazardous Polymerization:	Will not occur.
Hazardous Decomposition:	Elevated temperatures may produce hydrogen chloride, carbon monoxide, and carbon dioxide.
Conditions to Avoid:	Open flames or prolonged exposure to temperatures above 300° F will cause thermal decomposition.

8. PRECAUTIONS FOR SAFE HANDLING AND USE

Handling and Storage:	Store in a cool dry place; provide adequate ventilation during processing.
Spill or Leak Procedures:	Contain the spill – do not allow discharge into the sewer system. Soak up the spill using an inert absorbent material such as sawdust, and scoop the absorbed material into a container for disposal.
Waste Disposal Method:	Recycle, incinerate, or landfill in accordance with federal, state, and local regulations.
Engineering Measures:	Ventilation is required in processing areas to prevent inhalation of fumes from heated material.
Personal Protection:	Protective gloves and safety glasses are recommended to prevent skin and eye contact.
General Hygiene:	Observe good industrial hygiene and safety practices. Wash hands with soap and water before breaks and at the end of the day.

9. REGULATORY INFORMATION

California Proposition 65: **WARNING!** This product contains a chemical known to the State of California to cause cancer. (Vinyl Chloride Monomer, CAS # 75-01-4)

10. ADDITIONAL INFORMATION

This information is furnished without warranty, express or implied – it is the responsibility of the user to determine the suitability and completeness of such information and recommendations for its own particular use. Vendor shall not be responsible for any direct, incidental, or consequential damages of whatsoever nature resulting from the publication of, use of, or reliance upon such information and recommendations.