



**Aluminum - MSDS**

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1. CHEMICAL PRODUCT NAME AND COMPANY IDENTIFICATION

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CHEMICAL PRODUCT NAME: Aluminium

COMPANY INFORMATION

NAME OF MANUFACTURER: Hydro Aluminium

NAME OF SECTION: Health, Environment & Safety

ADDRESS: Hydro Aluminum North America

801 International Drive

Linthicum

MD 21090

TELEPHONE NUMBER: +410 - 487 4500

FAXIMILE NUMBER: +410 - 487 8168

2. COMPOSITION, INFORMATION ON INGREDIENTS

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SUBSTANCE/MIXTURE: Substance

	<u>Chemical formula</u>	<u>Wt%</u>	<u>CAS No.</u>
Aluminium and all aluminium alloys, 6XXX, 3XXX, 1XXX	Al	60 - 100	7429-90-5

HAZARD SYMBOL: Not applicable

RISK PHRASES: Not applicable

SAFETY ADVICES: Not applicable

3. HAZARDS IDENTIFICATION

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PHYSICAL AND CHEMICAL HAZARDS: In usual conditions, the material does not suppose representing any risk to the health. However, in case of inhalation dust or fumes from molten metal, the respiratory system may be irritated. No instances of silicosis as a consequence of exposure to aluminium particles is known.

ADVERSE HUMAN HEALTH HAZARDS: Not applicable

ENVIRONMENTAL EFFECTS: Not applicable



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**4. FIRST AID MEASURES**

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EYE CONTACT: Not applicable  
SKIN CONTACT: Not applicable  
INHALATION: Not applicable  
INGESTION: Not applicable

**5. FIRE FIGHTING MEASURES:**

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Solid forms of aluminium is not flammable.  
Fine divided aluminium-powder in air may be ignitable.

**6. ACCIDENTAL RELEASE MEASURES:**

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Acute effects as a result from exposure to aluminium is not probable.

**7. HANDLING AND STORAGE:**

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No special requirements.

**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

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Avoid dust emission. In case of dust emission, the work has to be done in well ventilated area. Respiratory protection may be necessary.

**9. PHYSICAL AND CHEMICAL PROPERTIES:**

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APPEARANCE:	Silver grey metal, no odour
BOILING POINT:	2450 °C
VAPOUR PRESSURE:	Not available
MELTING POINT:	Ca. 660
INITIAL BOILING POINT:	Not available
VOLATILITY:	Not available



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SPECIFIC GRAVITY: 2.7  
SOLUBILITY (IN WATER): Insoluble

10. STABILITY AND REACTIVITY:

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In contact with alkalis, inflammable gas (hydrogen) may emit.

11. TOXICOLOGICAL INFORMATION:

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Acute oral/acute inhalation: No data for massive aluminium.  
Acute dermal: No toxicity reported.

12. ECOLOGICAL INFORMATION:

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Metallic aluminium is not bio available and cannot enter ecosystems as such but only under form of compounds.

13. DISPOSAL CONSIDERATIONS:

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Aluminium is currently recycled.

14. TRANSPORT INFORMATION:

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UN CLASS: None  
UN NUMBER: None

15. REGULATORY INFORMATION:

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LABELLING ACCORDING TO EEC DIRECTIVES:  
HAZARD SYMBOL: No labelling required

16. OTHER INFORMATION:

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**EMERGENCY CONTACTS**

Telephone: + 44 (0) 1443 865090  
 FAX: + 44 (0) 1443 865099

**Section 1. Preparation and Company Identification**

Product Name ..... **Cured Polyurethane EU**  
 Synonyms ..... Polyurethane Polymer  
 CAS Number ..... NA

**AZON (UK) LTD.**  
 Unit 2, Withey Dyffryn Court  
 Alder Avenue, Dyffryn Business Park  
 Ystrad Mynach  
 HENGOED  
 CF82 7TT  
 UK

**Section 2. Composition / Information on Ingredients**

INGREDIENTS		
Ingredient Name	CAS Number	Concentration
Cured Polyurethane Elastomer	N/A	>95%

**Section 3. Hazards Identification**

Acute Inhalation- Very fine airborne sanding dust can irritate respiratory tract.  
 Chronic Inhalation- No known effects from chronic exposure.  
 Acute Skin Contact- Dermal exposure may cause itching and hives on sensitive skin.  
 Chronic Skin Contact- No known effects from chronic exposure.  
 Medical Conditions Aggravated by Exposure- No known medical conditions aggravated by exposure.

**Section 4. First Aid Measures**

If dust is inhaled, move individual to area free from risk of further exposure. For skin contact, wash affected area to remove dust.

**Section 5. Fire Fighting Measures**

Flash Point- N/A  
 Extinguishing Media- Dry Chemical; Carbon Dioxide; Water spray for large fires.  
 Special Fire Fighting Instructions- Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters.

**Section 6. Accidental Release Measures**

N/A

**Section 7. Handling and Storage**

N/A

**Section 8. Personal Protection**

Eye Protection Requirements- Safety glasses with sideshields.  
 Skin Protection Requirement- Not normally required.  
 Ventilation Requirements- Local exhaust ventilation is recommended if dust is generated. Otherwise, use general exhaust ventilation.  
 Respirator Requirements- Not normally required. In high dust environments an approved dust mask should be worn.

**Section 9. Physical and Chemical Properties**

PHYSICAL FORM..... Solid  
COLOR ..... Dark brown to black  
BOILING POINT ..... N/A  
MELTING/FREEZING POINT ..... N/A  
SPECIFIC GRAVITY..... 1.15  
BULK DENSITY ..... N/A

**Section 10. Stability and Reactivity**

Stability- This is a stable material.

Decomposition Product- Carbon monoxide, carbon dioxide, nitrogen oxides, HCN.

**Section 11. Toxicological Information**

N/A

**Section 12. Ecological Information**

N/A

**Section 13. Disposal Considerations**

Material is not considered hazardous. Dispose of in accordance with published regulations.

**Section 14. Transportation Information**

GGVSee/IMDG Code: --                      UN No.: --                      EmS: --  
PG: --    MPO: --  
GGVSE: Class --                      PG: --                      RID/ADR: Class --                      PG: --  
ADNR: Class --                      PG: --                      Cat --                      ICAO/IATA-DGR: Not Restricted

Declaration for land shipment: --  
Declaration for sea shipment: --  
Declaration for shipment by air: --

**Section 15. Regulatory Information**

Classification and labelling according to EU directives.

CLASSIFICATION- None

RISK PHRASES- None

SAFETY PHRASES- None

APPLICABLE LEGISLATION- The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002, The Control of Substances Hazardous to Health Regulations 2002, Packaging, Labelling of Dangerous Substances Regulations 1990, Approved Supply List (CHIP 3) 7<sup>th</sup> Edition.

**Section 16. Other Information**

Reason for issue ..... Updated UK address and telephone numbers.  
Prepared by ..... Steve Beck  
Approval date ..... 11/23/2009

**WARRANTY** The information contained in this document is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. The customer must inspect and test our products before use, and satisfy themselves as to the contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials, and in no event shall we be liable for special, incidental, or consequential damages.

**PORTAGE PRECISION POLYMERS, INC.,**

MATERIAL SAFETY DATA SHEET

**RM - 270555**

**EPG, INC.**

Version Number 1.0

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**1. PRODUCT AND COMPANY IDENTIFICATION**

PORTAGE PRECISION POLYMERS, INC.

215 West Lake Street; Ravenna, Ohio 44266

NON-EMERGENCY TELEPHON : Product Stewardship 330.296.6327  
EMERGENCY TELEPHONE NU : CHEMTREC 1.800.424.9300 (24 hours for spill, leak, fire, exposure, or accident)

Product name : RM - 270555  
Chemical Name : Mixture  
CAS-No. : Mixture  
Product Use : Industrial Applications

**2. COMPOSITION / INFORMATION ON HAZARDOUS INGREDIENTS**

Components	CAS-NO.	Weight %
Calcium Oxide	1305-78-8	1 - 5
Zinc Oxide	1314-13-2	1 - 5
Petroleum distillates, solvent-refined heavy paraffinic	64741-88-4	10 - 30
Carbon black	1333-86-4	30 - 60

**3. HAZARDOUS IDENTIFICATION**

This mixture has not been evaluated as a whole. All ingredients are bound and potential for hazardous exposure as shipped is minimal. However, some fumes may be released upon heating or cross-linking and the end-user (fabricator) must take the necessary precautions (mechanical ventilation, respiratory protection, etc.) to protect his/her employees from exposure. See sections 3 and 11 for special precautions.

**POTENTIAL HEALTH EFFECTS**

Routes of Exposure : Inhalation, Ingestion. Skin contact

Acute exposure:

Inhalation : Resin particles, like other inert materials, can be mechanically irritating.  
Ingestion : May be harmful if swallowed.  
Eyes : Resin particles, like other inert materials, are mechanically irritating to eyes.  
Skin : Experience shows no unusual dermatitis hazard from routine handling.

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Chronic exposure : Refer to Section 11 for Toxicological Information.

Medical Conditions : None known.

Aggravated by Exposure:

**4. FIRST AID MEASURES**

Inhalation : Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. When symptoms persist or in all cases of doubt, seek medical advice.

Ingestion : DO NOT INDUCE VOMITING WITHOUT MEDICAL ADVICE. When symptoms persist or in all cases of doubt seek medical advice.

Eyes : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention as soon as possible.

Skin : Wash off with soap and water. If skin irritation persists seek medical attention as soon as possible.

**5. FIRE-FIGHTING MEASURES**

Flash point : Not applicable

**Flammable Limits**

Upper explosion limit : Not applicable

Lower explosion limit : Not applicable

Auto-ignition temperature : Not Relevant

Suitable extinguishing media : Water spray, dry powder, foam, carbon dioxide (CO<sub>2</sub>).

Special Fire Fighting Procedures : Full-face self-contained breathing apparatus (SCBA) used in positive pressure mode should be worn to prevent inhalation of airborne contaminants.

Unusual Fire/Explosion Hazards : None

**6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Wear appropriate personal protection during clean-up, such as impervious gloves, boots and coveralls.

Environmental precautions : Should not be released into the environment. The product should not be allowed to enter drains, water courses or the soil.

Methods for cleaning up : Clean up promptly by sweeping or vacuum. Package all material in plastic, cardboard or metal containers for disposal. Refer to Section 13 for proper disposal.

## MATERIAL SAFETY DATA SHEET

### I. PRODUCT INFORMATION

<b>Manufacturer:</b> Foamex International, Inc. 1400 N. Providence Road Media, PA 19063	<b>Telephone Number:</b> 610-744-2300 <b>Emergency Phone Number:</b> 610-245-2765 <b>Date Prepared:</b> January 27, 2009	
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**Chemical Family:** *Polyurethane Foam*

**Product Category:** All polyether and polyester foam products

HMIS	
Health:	0
Flammability:	1
Reactivity:	0

### II. HAZARDOUS INGREDIENTS

	<u>CAS #</u>	<u>% by Weight</u>	<u>OSHA PEL/ACGIH TLV</u>
Polyurethane Foam	N/A	100%	None Established

Foamex polyurethane foam is a fully cross-linked reaction product of polyhydroxy polyol, isocyanates, catalysts, surfactants, colorants and water. Additional additives may be present, depending on the product, such as fire retardants, germicides and antistatic agents.

This product is not hazardous according to the criteria established in the OSHA Hazard Communication Standard.

### III. PHYSICAL/CHEMICAL CHARACTERISTICS

<b>Boiling Point:</b>	Not Available	<b>Density:</b>	0.5- 40 lb <sub>m</sub> /ft <sup>3</sup>
<b>Vapor Pressure (mm Hg):</b>	Not Available	<b>Melting Point:</b>	400 – 420°F
<b>Vapor Density:</b>	Not Available	<b>Evaporation Rate:</b>	Not Available

**Solubility in Water:** Insoluble

**Appearance and Odor:** Uniform cellular solid structure of varying colors with slight characteristic odor.

### IV. FIRE AND EXPLOSION HAZARD DATA

<b>Flash Point:</b>	Decomposition products flash at >500°F	<b>LEL:</b> None
<b>Flammable Limits:</b>	Not Available	<b>UEL:</b> None
<b>Classification:</b>	Combustible Solid	
<b>NFPA Sprinkler Classification:</b>	Extra Hazard	
<b>Extinguishing Media:</b>	Dry Chemical; Water; Carbon Dioxide	
<b>Special Fire Fighting Procedures:</b>	Wear self-contained breathing apparatus in enclosed areas.	
<b>Unusual Fire &amp; Explosion Hazards:</b>	If ignited, foam can produce rapid flame spread, intense heat, and dense black smoke and toxic gases. Material can melt into a burning liquid that can drip and flow.	



Accumulated polyurethane dust can be readily ignited and presents a fire risk. High concentrations of dust in the air can explode if exposed to a flame, spark or other ignition sources.

**V. REACTIVITY DATA**

<b>Stability:</b>	Stable
<b>Conditions To Avoid:</b>	High temperature, open flames; strong oxidizers (i.e. chlorates, bromates, nitrates and hypochlorites) can cause discoloration to foam.
<b>Incompatibility:</b>	Strong oxidizing acids and bases - will degrade product.
<b>Hazardous Decomposition Products:</b>	Carbon monoxide, carbon dioxide, oxides of nitrogen, free isocyanate, acetaldehyde, acrylonitrile, polymer fragments, and hydrogen cyanide. Fire retardant foams may generate emissions of hydrogen chloride, hydrogen bromide, hydrogen fluoride or phosphoric acid depending on the fire retardant additive.
<b>Hazardous Polymerization:</b>	Will not occur

**VI. HEALTH HAZARD DATA**

<b>Routes of Entry:</b>	<b>Inhalation - <i>Foam dust</i></b>	
<b>Health Hazards:</b>	Coarse dust can cause mechanical irritation of the upper respiratory tract when concentrations are above the applicable occupational exposure limit. Airborne dust is evaluated as a nuisance dust. If ignited, foam may decompose and emit toxic gases and respiratory irritants.	
	<i>Irritating Vapors</i>	
	Irritating vapors (decomposition products) may be produced if product is exposed to high temperatures above 350°F	
	<b>Eye - <i>Foam dust</i></b>	
	Coarse dust can cause mechanical irritation to the eyes. If exposed, avoid rubbing eyes.	
	<i>Irritating Vapors</i>	
	Irritating vapors (decomposition products) may be produced if product is exposed to high temperatures above 350°F	
<b>Carcinogenicity:</b>	<b>NTP:</b>	No
	<b>IARC Cancer Review:</b>	No
	<b>OSHA Regulated:</b>	No
<b>Medical Conditions Aggravated by Exposure:</b>	None Known	
<b>Emergency First Aid Procedures:</b>	Inhalation:	Remove to fresh air, contact physician if respiratory discomfort persists.



Eyes:	Flush eyes thoroughly with water for 15 minutes.
Skin:	None necessary
Ingestion:	None necessary

**VII. PRECAUTIONS FOR SAFE HANDLING AND USE**

**Steps to be Taken in Case**

**Material is Released or Spilled:** No special response required ---pick up, vacuum or sweep up.

**Waste Disposal Method:** Federal, state and local authorities should be contacted before attempting any form of disposal.

**Transportation Information:** Not currently regulated by DOT  
Suggested shipping name – Polyurethane Foam

**Federal Regulations:**

<b>TSCA:</b>	All components listed; Material is an article
<b>OSHA:</b>	Defined as an article unless it undergoes further processing
<b>HPA (Canada)</b>	Defined as an article unless it undergoes further processing
<b>CERCLA:</b>	Not Reportable
<b>CEPA(1999) (Canada)</b>	Not Reportable
<b>SARA Title III:</b>	311/312 Hazard Categories: None 313 Reportable Ingredients: None
<b>Clean Air Act:</b>	No ozone depleting emissions

**Safe Handling and Storage:** Warehousing of bun stock, sheets, rolls and fabricated items should be stored under a fusible sprinkler system with a minimum of six feet clearance between stacks of foam and the sprinkler heads.  
Do not store foam near any ignition sources such as exposed electrical or gas heating elements, open flames and exposed lights. Do not smoke in foam storage areas.  
Do not allow foam scrap and cuttings to accumulate and maintain clear aisles with adequate access to all storage areas and exits.

**Other Precautions:** Notify local fire companies of presence of large quantities of foam.

**VIII. CONTROL MEASURES**

**Ventilation:** Local exhaust ventilation is recommended for those processing procedures that may generate foam dust and decomposition products. Examples of these processes include sawing, grinding, buffing and flame lamination, hot wire cutting, heat sealing and hot stamping.

**Respiratory Protection:** Should be selected based on the identity and concentration of air contaminant. Only NIOSH-approved respirators for protection against the air contaminant of concern should be used.

**Eye Protection:** Recommended for those processing operations that may generate dust.



**Skin Protection:** Use adequate hand protection during hot processing operations. Use guards and/or protective gloves for cutting operations.

## IX. SPECIAL INFORMATION

### **1. DO NOT EXPOSE POLYURETHANE FOAM TO OPEN FLAMES OR OTHER DIRECT OR INDIRECT HIGH TEMPERATURE IGNITION SOURCES.**

Polyurethane foam will burn if exposed to a sufficient heat source. The ignition temperature of polyurethane foam will vary depending on the product chemical formulation, but all polyurethane foams are combustible and represent a fire risk. Polyurethane foams, once ignited, may degrade and melt to a combustible liquid, which may add to the fire involvement.

### **2. TERMS SUCH AS “FIRE RETARDANT”, “SLOW BURNING”, “FLAME RESISTANT” AND “UNDERWRITER’S LABORATORY RATED” DESCRIBE CERTAIN FLAMMABILITY PROPERTIES AND MUST NOT BE REGARDED AS DENOTING FIRE SAFETY UNDER ALL CONDITIONS.**

Additionally, small-scale fire tests are not intended to reflect hazards presented by these or any other material under real fire conditions.

### **3. SMOKE FROM BURNING FOAM IS IRRITATING TO THE EYES AND RESPIRATORY TRACT. SMOKE INHALED FROM BURNING OR SMOLDERING PRODUCT MAY BE TOXIC.**

Thermal decomposition products from polyurethane foams can be toxic and present a risk to humans who are exposed. This is true for all organic materials. Fire risks in varying degrees are common to all fires: heat, carbon monoxide, other toxicants, oxygen depletion and smoke. In fires involving polyurethane foam, particularly flexible foams, great heat, and large quantities of dense smoke and potentially toxic gases can be generated quickly.

### **4. STANDARD FIRE-FIGHTING EQUIPMENT GENERALLY EMPLOYED BY AUTHORIZED FIREMEN IS MANDATORY**

Personnel involved in fire fighting should wear self-contained breathing apparatus and be aware of the exposure to toxic and potentially lethal smoke and gases.

## X. USERS RESPONSIBILITY

An MSDS such as this cannot be expected to cover all possible individual situations. The user has the responsibility to provide a safe workplace. All aspects of an individual operation should be examined to determine if, or where precautions -- in addition to those described herein -- are required. Any health hazard information contained herein should be passed on to your employees.

*The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results and assume no liability for damages incurred by the use of this material. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Final determination of suitability of this material is the sole responsibility of the user. No representations or warranties, either expressed or implied, of merchantability, fitness for a particular purpose or any other nature are made hereunder with respect to the information contained herein or the material to which the information refers. It is the responsibility of the user to comply with all applicable federal, state and local laws and regulations.*

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**7. HANDLING AND STORAGE**

- Handling : Take measures to prevent the build up of electrostatic charge. Heat only in areas with appropriate exhaust ventilation.
- Storage : Keep containers dry and tightly closed to avoid moisture absorption and contamination. Keep in a dry, cool place.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

- Respiratory protection : No personal respiratory protective equipment is normally required when handling the product itself. See "Engineering Measures" section below for precautions to be taken when heating/processing this material.
- Eye/Face protection : Safety Glasses (with side-shields).
- Hand protection : Protective gloves.
- Skin and body protection : Long-sleeved clothing.
- Additional Protective Measures : Safety shoes.
- General Hygiene Considerations : Handle in accordance with good industrial hygiene and safety practice. Wash before work-breaks and at the end of the workday.
- Engineering measures : Heat only in areas with appropriate exhaust ventilation. Adequate ventilation and/or appropriate respiratory protection may also be necessary to minimize employee exposure to vapors while processing this material.

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Exposure Limit(s) :

Components	Value	Exposure Time	Exposure Type	List
Calcium oxide	2 mg/m3	Time Weighted Avera(TAW)	Dust	AGCY.
	5 mg/m3	PEEL:	Dust	OOA Z1
Carbon black	3.5 mg/m3	Time Weighted Avera(TAW)	Total dust as carbon	AGCY.
	3.5 mg/m3	PEEL:	Total dust as carbon	OOA Z1
Petroleum distillates, solvent-refined heavy paraffinic	500 ppm; 2000 mg/m	PEL:		OSHA Z1
Zinc oxide	10 mg/m3	Time Weighted Avera(TAW)	Total dust as zinc	ACGIH
	5 mg/m3	PEL:	Respirable dust in zinc	OSHA Z1
	15 mg/m3	PEL:	Total dust as zinc	OSHA Z1

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Form	: Solid	Evaporation rate	Not applicable.
Appearance	: Pellets,slabs, sheets	Specific gravity	Not determined.
Color	: Black	Bulk density	Not established.
Odor	: Characteristic of rubber	Vapor pressure	Not applicable.
Melting point/range	: Not determined	Vapor density	Not applicable.
Boiling point	: Not applicable	pH	Not applicable.
Water solubility	: Insoluble		

**10. STABILITY AND CHEMICAL PROPERTIES**

Stability	: Stable.
Hazardous Polymerization	: Will not occur.
Conditions to avoid	: Keep away from oxidizing agents and open flame. To avoid thermal decomposition do not overheat.
Incompatible materials	: Strong acids and oxidizing agents.
Hazardous decomposition produ	: Carbon dioxide (CO2), carbon monoxide (co) oxides of nitrogen (Nox), other hazardous materials, and smoke are all possible.

**11. TOXICOLOGICAL INFORMATION**

This mixture has not been evaluated as a whole for health effects. Exposure effects listed are based on existing health data for the individual components which make up the compound.

Toxicity overview:

This product contains the following components which in their pure form have the following characteristics:

CAS-No.	Chemical Name	Effect	Target Organ
1305-78-8	Calcium oxide	Irritant	Skin

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		Systemic effects	Eyes, skin, respiratory system.
		Corrosive	Skin.
1314-13-2	Petroleum distillates, solvent-refined heavy paraffinic	Irritant	Eyes, skin.
64741-88-4			
1333-86-4	Carbon black	Systemic effects	Eyes, respiratory system.

## LC50 / LD50

This product contains the following components which in their pure form have the following toxicity data:

CAS-NO.	CHEMICAL NAME	ROUTE	VALUE	SPECIES
1314-13-2	Zinc Oxide	LC50 Oral LD50	2,500 mg/m <sup>3</sup> 7,950 mg/kg	mouse mouse
1333-86-4	Carbon black	Oral LD50 Dermal LD50	>15,400 mg/m <sup>3</sup> >3 mg/kg	rat rabbit

## Carcinogenicity:

This product contains the following components which in their pure form have the following carcinogenicity:

CAS-No.	Chemical Name	OSHA	IARC	NTP
1333-86-4	Carbon black	no	2B	no

## IARC Carcinogen Classifications:

- 1 - The component is carcinogenic to humans.
- 2 A - The component is probably carcinogenic to humans.
- 2 B - The component is possibly carcinogenic to humans.

## NTP Carcinogen Classifications:

- 1 - The component is known to be a human carcinogen.
- 2 - The component is reasonably anticipated to be a human carcinogen.

Additional Health Hazard Information:

Carbon black 1333-86-4 Carcinogenicity: Many inhalation toxicologists believe that the tumor response observed in the referenced rat studies is species specific and does not correlate to human exposure. However, the IARC evaluation in Monograph Volume 65, issued in April 1996, concluded that there is sufficient evidence in experimental animals for the carcinogenicity of carbon black. Based on this evaluation, along with their evaluation of inadequate evidence of carcinogenicity in humans, IARC's overall evaluation is that Carbon Black is possibly carcinogenic to humans (Group 2B). Carbon black has not been listed as a carcinogen by the National Toxicology Program (NTP) or the Occupational Safety and Health Administration (OSHA). The National Institute of Occupational Safety and Health (NIOSH) criteria document on carbon black recommends that only carbon black with PAH (polynuclear aromatic hydrocarbon) levels greater than 0.1 be considered suspect carcinogens.

## 12. ECOLOGICAL INFORMATION

Persistence and degradability : Not readily biodegradable.

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Environmental Toxicity : Chemicals are not readily available as they are bound within the matrix of the polymer.

Bioaccumulation Potential : Chemicals are not readily available as they are bound within the matrix of the polymer.

Additional advice : Not applicable

**13. DISPOSAL CONSIDERATIONS**

Product : Where possible recycling is preferred to disposal or incineration. The generator of waste material has the responsibility for proper waste classification, transportation and disposal in accordance with applicable federal, state, provincial, and/or local regulations.

Contaminated packaging : Recycling is preferred when possible. The generator of waste material has the responsibility for proper waste classification, transportation, and disposal in accordance with all applicable federal, state, provincial, and/or local regulations.

**14. TRANSPORT INFORMATION**

U.S. D.O.T. / CA T.D.G. Classification (Non-bulk ground) : Not regulated for transportation.

ICAO / IATA : Not regulated for transportation.

IMO / IMDG : Not regulated for transportation.

**15. REGULATORY INFORMATION**

U.S. Regulations:

OSHA Status : Classified as hazardous based on components.

TSCA Status : All components of this product are listed on the TSCA inventory or are exempt.

U.S. E.P.A. CIRCA Hazardous Substances (40 CFR 302)

Chemical Name	CAS-No.	R Q for Mixture / Product
Ziram	137-30-4	840 LB

California Proposition 65 : This product does not contain a substance listed by California Proposition 65.

SARA Title III Section 313 Toxic Chemicals:

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Chemical Name	CAS-NO.	Weight %
ZINC COMPOUNDS	1314-13-2	0.95
ZINC COMPOUNDS	136-23-2	0.23
ZINC COMPOUNDS	137-30-4	0.11

Canadian Regulations:

WHMIS Classification : D1B

WHMIS Ingredient Disclosure List

CAS-No.
1305-78-8
1333-86-4
16219-75-3
7631-86-9
57-11-4
1314-13-2
79-09-4
137-26-8
137-30-4

DSL : Listed

National Inventories:

Australia AICS : Listed.

Chia IECS : Not determined.

Europe EINECS : Not determined.

Japan ENCS : Not determined.

Korea KECI : Listed.

Philippines PICCS : Listed.

**16. OTHER INFORMATION**

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.

LINETEC  
MATERIAL SAFETY DATA SHEET  
PAINT CODE

SECTION 1 - PRODUCT  
INFORMATION

This product is a combination of the following base tints supplied by PPG Industries, Inc.:  
56600 56601 56602 56609

MANUFACTURERS ADDRESS	4325 Rosanna Drive, PO Box 9, Allison Park, PA 15101
MFG TELEPHONE NUMBER	(412) 492- 5555
24 HOUR EMERGENCY PHONE NUMBER	(304) 843-1300
CHEMICAL FAMILY	Acrylic Fluoropolymer
TRADE NAME	LT Duranar

PRIMARY HAZARD WARNING

Flammable. Keep away from heat, sparks, flames, and other sources of ignition. Do not smoke. Extinguish all flames and pilot lights. Turn off stoves, heaters, electrical motors, and other sources of ignition during use and until all vapors/odors are gone. Harmful or fatal if swallowed. Dried film of this product may be harmful if chewed or swallowed. May cause slight skin irritation. Causes severe eye irritation. May be harmful if absorbed through the skin. Vapor and/or spray mist harmful if inhaled. Vapor irritates eyes, nose, and throat. Sanding and grinding dusts may be harmful if inhaled

SECTION 2 - HAZARDOUS  
INGREDIENTS

CAS #	NAME	APPROX % BY WT	AGCIH		OSHA	
			TLV-TWA	TLV-STEL	PEL-TWA	PEL-STEL
100-41-4	Ethyl Benzene	1-5%	100 ppm	125 ppm	100 ppm	125 ppm
108-65-6	Propylene Glycol, Mono Methyl Ether Acetate	5-20%	Not Established	Not Established	Not Established	Not Established
108-88-3	Toluene	< 20%	50 ppm	150 ppm	100 ppm	150 ppm
111-76-2	Butyl Cellosolve	< 20%	25 ppm	Not Established	25 ppm	Not Established
131-11-3	Dimethyl Phthalate	< 10%	5 mg/m <sup>3</sup>	Not Established	5 mg/m <sup>3</sup>	Not Established
1330-20-7	Xylene	< 20%	100 ppm	150 ppm	100 ppm	150 ppm
13463-67-7	Titanium Dioxide	< 20%	10 mg/m <sup>3</sup>	Not Established	10 mg/m <sup>3</sup>	Not Established
140-88-5	Ethyl Acrylate	< 1%	5 ppm	15 ppm	5 ppm	25 ppm
309-37-1	Red Iron Oxide	< 20%	5 mg/m <sup>3</sup>	Not Established	10 mg/m <sup>3</sup>	Not Established
8186-90-3	Chrome Antimony Titanium Buff Rutile	< 20%	0.5 mg/m <sup>3</sup>	Not Established	0.5 mg/m <sup>3</sup>	Not Established
8187-02-0	Iron Titanate Pigment	< 20%	5 mg/m <sup>3</sup>	3 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	Not Established
308-39-9	Chrome Oxide Pigment Green 17	< 20%	0.5 mg/m <sup>3</sup>	Not Established	Not Established	Not Established
8187-11-1	Cobalt Chromite Pigment Blue 36	< 20%	0.5 mg/m <sup>3</sup>	Not Established	0.5 mg/m <sup>3</sup>	Not Established
2007-18-9	Nickel Antimony Titanate Pig Yellow 53	< 20%	1 mg/m <sup>3</sup>	Not Established	1 mg/m <sup>3</sup>	Not Established
1752-95-6	Naphtha	< 5%	Not Established	Not Established	Not Established	Not Established
1052-41-3	Naphtha	< 5%	100 ppm	Not Established	100 ppm	Not Established
129-90-5	Aluminum Powder	< 20%	5 mg/m <sup>3</sup>	Not Established	5 mg/m <sup>3</sup>	Not Established
1186-85-6	Cobalt Titanate Pigment Green 50	< 20%	0.5 mg/m <sup>3</sup>	Not Established	0.5 mg/m <sup>3</sup>	Not Established
45-16-0	Cobalt Pigment Blue 28	< 20%	0.5 mg/m <sup>3</sup>	Not Established	0.5 mg/m <sup>3</sup>	Not Established
742-94-5	Naphtha	< 5%	Not Established	Not Established	Not Established	Not Established

### SECTION 3 - HAZARDS IDENTIFICATION

#### EFFECTS OF OVEREXPOSURE FROM:

Ingestion: Harmful or fatal if swallowed. Dried film of this product may be harmful if chewed or swallowed.

Eye Contact: Causes severe eye irritation.

Skin Contact: May cause slight skin irritation. May be harmful if absorbed through the skin.

Inhalation: Vapor and/or spray mist harmful if inhaled. Vapor irritates eyes, nose, and throat. Sanding and grinding dusts may be harmful if inhaled. Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage.

Chronic Overexposure: Avoid long term and repeated contact.

This product may contain an ethylene series glycol ether and /or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood forming tissue.

This product may contain titanium dioxide. Animals inhaling massive quantities of titanium dioxide dust in a long term study developed lung tumors. Studies with humans involved with the manufacture of this pigment indicate no increased risk of cancer from exposure. Potential for inhalation of titanium dioxide dusts from coatings is very limited. Since overexposure are not expected, there is no significant hazard for man.

This product may contain Dimethyl Phthalate (DMP). DMP was shown to be mutagenic (in vitro) and teratogenic when injected into the abdominal cavity of lab animals. A chronic oral study showed adverse kidney effects in female rats. No evidence of these effects has been found in humans.

This product may contain Ethyl Acrylate. Adverse effects on the liver, kidneys, spleen, and heart were seen in laboratory animals ingesting or inhaling large amounts of ethyl acrylate. No evidence of these effects in humans has been documented.

This product may contain toluene. Toluene inhalation in animals (greater than 1500 ppm) and intentional inhalation of toluene containing products by humans (e.g. glue) has caused adverse fetal development effects.

Chronic exposure to cobalt may cause cough, shortness of breath, and reduced lung function. These symptoms may be due to an allergic response to cobalt.

This product may contain Nickel Antimony Titanate. IARC and NTP consider nickel compounds to be carcinogenic to animals and humans. There is no mention of this pigment, specifically, by NTP or IARC. No data exists to show that Nickel Antimony Titanate causes cancer in either animals or humans.

This product may contain a Nickel compound. IARC classifies nickel compounds as carcinogenic to humans. NTP concludes that metallic nickel and certain specific nickel compounds are carcinogenic.

#### SIGNS AND SYMPTOMS OF OVEREXPOSURE:

Eye watering, head aches, nausea, dizziness, and a loss of coordination are indications that solvent levels are too high. Intentional abuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Not applicable.

### SECTION 4 - FIRST AID MEASURES

Ingestion: If swallowed, do not induce vomiting. Gently wipe out inside of mouth to remove any residual material.

Eye Contact: In case of eye contact, remove contact lenses and flush eyes immediately with a gentle stream of luke warm water for at least 15 minutes.

Skin Contact: In case of skin contact, flush immediately with plenty of water for at least 15 minutes followed by washing with soap water.

Inhalation: If affected by inhalation of vapor or spray mist, remove to fresh air. Apply artificial respiration and other support measures as required.

First Aid: If ingestion, any type of overexposure or symptoms of overexposure occur during or following the use of this product, contact a poison control center, emergency room or physician immediately; have Material Safety Data Sheet information available.

### SECTION 5 - FIRE FIGHTING MEASURES

Flashpoint: 60 degrees F (Pensky-Martens Closed Cup)

Flammable Limit: 1.2

Explosive Limit: Not Available

Extinguishing Media: Use NFPA Class B extinguishers (carbon dioxide, dry chemical, or universal aqueous film forming foam) to extinguish NFPA Class IB flammable liquid fires.

Unusual Fire and Explosion Hazards: Keep this product away from heat, sparks, flame, and other sources of ignition (i.e., pilot lights, electric motors, static electricity). Invisible vapors can travel to a source of ignition and flash back. Do not smoke while using this product. Keep containers tightly closed when not in use. Closed containers may explode when overheated. Do not apply to hot surfaces. Toxic gases may form when this product comes in contact with extreme heat.

Special Fire Fighting Instructions: Water spray may be ineffective. Water spray may be used to cool closed containers to prevent pressure buildup and possible auto ignition or explosion when exposed to extreme heat. If water is used, fog nozzles are preferable. Fire-fighters should wear self-contained breathing apparatus and full protective clothing.

#### SECTION 6 - ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled: Provide maximum ventilation. Only personnel equipped with proper respiratory, skin, and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sand, vermiculite, or other noncombustible absorbent material and place in clean, empty containers for disposal. Only the spilled material and the absorbent should be placed in this container.

Waste Disposal Method: Waste material must be disposed of in accordance with federal, state, and local environmental control regulations. Empty containers should be recycled or disposed of through an approved waste management facility.

#### SECTION 7 - HANDLING AND STORAGE

Handling and Storage Precautions: Do not store above 120 degrees F. Store large quantities in buildings designed and protected for storage of class IB flammable liquids.

Other Precautions: Vapors may collect in low areas. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component(s) before blending as the resulting mixture may have the hazards of all of its parts. Containers should be grounded when pouring. Avoid free fall in excess of a few inches.

#### SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

##### PERSONAL PROTECTIVE EQUIPMENT FOR:

Eye Protection: Wear chemical-type splash goggles when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapors.

Skin Protection: Wear protective clothing to prevent skin contact. Apron and gloves should be constructed of: neoprene rubber or nitrile rubber. No specific permeation/degradation testing have been done on protective clothing for this product. Recommendations for skin protection are based on infrequent contact with this product. For frequent or total immersion, contact a manufacturer of protective clothing for appropriate chemical impervious equipment.

#### SECTION 9 - PHYSICAL DATA

Boiling Range:	149-543 Deg F	Percent Volatile by Volume	70
Vapor Pressure mm HG at 68 deg F:	9-10	Evaporation Rate (Butyl Acetate = 1)	.88
Vapor Density:	Heavier than air	Appearance and Odor	Normal for coatings product
Specific Gravity:	1.2 - 1.4		

#### SECTION 10 - STABILITY AND REACTIVITY

This product is normally stable and will not undergo hazardous reactions.

Incompatibility (Materials and Conditions to Avoid): Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

Hazardous Decomposition Products: May produce the following hazardous decomposition products when exposed to extreme heat: carbon monoxide; carbon dioxide; fluorinated products; lower molecular weight polymer fractions; oxides of chromium; oxides of antimony. Extreme heat includes, but is not limited to, flame cutting, brazing, and welding.



## EC-Safety Data Sheet

### 1. Product and company name

#### 1.1 Product data:

Subject No.: 200000-999900

Designation: Insulating strips

#### 1.2 Data on manufacturer:

Supplier: Technoform BAUTEC Kunststoffprodukte GmbH  
Ostring 4, D-34277 Fuldabrück  
Phone: +49 561/9583-400  
Fax: +49 561/9583-521

### 2. Composition / Data on constituents

#### 2.1 Chemical properties (individual substance): PA 66

Additional information: in addition to PA 66, also contains pigments, fillers, additives, stabilizers and glass fibres.

#### 2.2 Chemical properties (preparation):

Description: Product consists of PA 66, glass-fibre reinforced.

Hazardous constituents: none.

### 3. Potential hazards

None



## EC-Safety Data Sheet

### 4. First-aid measures

Upon contact with skin: Burns caused by molten material require medical care.

### 5. Fire-fighting measures

Suitable extinguishing agents: Water, foam, dry powder and CO<sub>2</sub>.  
Unsuitable extinguishing agents for reasons of safety: none.

Possibly released at temperatures in excess of 300° C: toxic gases, CO,  
Accompanied by traces of: hydrogen cyanide.

Further information: Formation of further breakdown and oxidation products is dependent on the conditions of the fire. Dispose of fire residues and contaminated fire-fighting water in accordance with regionally applicable official directives.

Special protective equipment: When fighting fires, it is necessary to wear a gas mask with an independent air supply.

### 6. Measures in case of accidental leakage

No personal or environmental precautionary measures necessary.

### 7. Handling and storage

Notes on safe handling: No special measures required.

Notes on fire and explosion protection: No special measures required.

Industrial hygiene: No special measures required.

Storage: Store in a dry place to ensure that handling properties are maintained.



## EC-Safety Data Sheet

### 8. Exposure limits and personal protective equipment

None

### 9. Physical and chemical properties

#### 9.1 Appearance

Shape: Oblong                      Colour: Black  
Odour: Odourless

#### 9.2 Safety data

Melting point:            245°-255° C  
Flash point:              490° C  
Ignition point:          530° C  
Density:                  1.25-1.35 g/ccm

Fire-promoting properties: Incineration or overheating.

#### 9.3 Further data

Combustion rate of PA 66: 1-2 cm/min.

### 10. Stability and reactivity

Thermal decomposition at > 300° C.

Hazardous decomposition products: Carbon monoxide, hydrogen cyanide;  
Depending on fire conditions: Aldehydes, amines, ammonia, ketones, nitriles and traces of nitrogen oxides possible.

Further data: no hazardous reactions observed.



## EC-Safety Data Sheet

### 11. Toxicological data

According to our experience and information, the product does not constitute a health hazard when handled and used correctly.

### 12. Ecological data

No ecotoxic effects; water hazard class (WHC): 0 (generally not a water hazard because water-insoluble, non-toxic solid).

General note: when handled correctly, no environmental risks expected.

### 13. Notes on disposal

The material in the product can be recycled. The product can be disposed of as household refuse in accordance with local directives or can be fed into a suitable incinerator.

### 14. Transportation data

Does not constitute a hazard in terms of transportation regulations.

### 15. Regulations

Not classified by Dangerous Chemicals Ordinance or relevant EC Guidelines.

When handling dust generated during mechanical processing, e.g. grinding, observe the relevant directives / limiting values for fines (lower toxic limit for fines: 6 mg/m<sup>3</sup>).



## EC-Safety Data Sheet

### 16. Other data

The cited data are based on our current knowledge and must not be taken as a warranty of properties.

The recipient of our product assumes responsibility to observe existing laws and provisions.