



# COSHH Risk Assessment No:

C10004

Directorate:  
COSHH REGISTER/ CHEMICALEstablishment/Section:  
ALL SITESDescribe the activity  
or work process.  
(Include how long and how  
often this is carried out and  
the quantity of substance  
used)ADD ANTI FREEZE TO WATER  
WHEN REQUIREDLocation of process  
being carried out?

WORKSHOP/YARD

Identify the persons at risk:

Employees  
(including trainees)

Contractors



Public

(including students)

Name the substance involved in the  
process and its manufacturer.  
(A copy of a current safety data sheet for this  
substance should be attached to this  
assessment)PXLC5 ANTIFREEZE  
PETROCHEM CARLESS LTD

## Classification (state the category of danger)

☐ Very Toxic☒ Irritant☐ Extremely  
Flammable☐ Toxic☐ Sensitising☐ Highly  
Flammable☐ Corrosive☐ Biological☐ Flammable☒ Harmful☐ Oxidising☒ Environmental

## Hazard Type

Gas Vapour Mist Fume ☒ Dust Liquid ☒ Solid Other (State)

## Route of Exposure



Inhalation



Skin



Eyes



Ingestion



Other

(State)

## Workplace Exposure Limits (WELs) please indicate n/a where not applicable

Long-term exposure level (8hrTWA):

474 MG/M3

Short-term exposure level (15 mins):

## State the Risks to Health from Identified Hazards

MAY CAUSE SENSATION BY SKIN CONTACT, RESPIRATORY IRRITATION, VOMITING, IRRITATING  
TO EYES

Control Measures: (for example extraction, ventilation, training, supervision). Include special measures for vulnerable groups, such as disabled people and pregnant workers. Take account of those substances that are produced from activities undertaken by another employer's employees.









WELL VENTILATED

Is health surveillance or monitoring required?

Yes ☐

No ☒

Personal Protective Equipment (state type and standard)

 <input type="checkbox"/>		 <input type="checkbox"/>	
Dust mask			
 <input type="checkbox"/>		 <input checked="" type="checkbox"/>	EN166-IF
Respirator		Goggles	
 <input checked="" type="checkbox"/>		 <input checked="" type="checkbox"/>	BS SAFETY STD
Gloves		Overalls	
 <input checked="" type="checkbox"/>		 <input type="checkbox"/>	
Footwear		Other	

First Aid Measures

INHALATION – MOVE TO FRESH AIR, CPR

INGESTION – WASH OUT MOUTH, SMALL QUANTITIES OF WATER, DO NOT INDUCE VOMITING

SKIN CONTACT – REMOVE CLOTHES, RINSE WITH WATER,

EYE CONTACT - FLUSH WITH PLENTY OF WATER LIFT EYE LIDS, SEEK MEDICAL ATTENTION IF DISCOMFORT CONTINUES.

Storage

IN BUNDED AREA

Disposal of Substances & Contaminated Containers

Hazardous Waste ☒ Skip ☐ Return to Depot ☐ Return to Supplier ☐ Other ☒

(If Other Please State): .....

Is exposure adequately controlled?

Yes ☒

No ☐

Risk Rating Following Control Measures

High ☐

Medium ☐

Low ☒

Assessed by: S. THOMAS

Date: 05/03/2015



## SAFETY DATA SHEET PXLC5

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

#### 1.1. Product identifier

##### REACH Registration notes

This material is a mixture. All components have been registered under REACH by the Manufacturer or Supplier.

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

##### Identified uses

Automotive Industry. Coolant applications requiring a low toxicity coolant

#### 1.3. Details of the supplier of the safety data sheet

##### Supplier

Petrochem Carless Limited  
Head Office - Cedar Court  
Guildford Road, Fetcham  
Leatherhead, Surrey  
KT22 9RX  
+44(0)1372 360000  
+44(0)1372 380400  
MSDSTeam@h-c-s-group.com

##### Contact Person

#### 1.4. Emergency telephone number

Please contact SHE Department on +44(0) 1255 502372

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

##### Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Repr. 2 - H361d
Environment	Not classified.

##### Classification (1999/45/EEC)

Not classified.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

#### 2.2. Label elements

##### Label In Accordance With (EC) No. 1272/2008



##### Signal Word

Warning

##### Hazard Statements

H361d

Suspected of damaging the unborn child.

##### Precautionary Statements

P281

Use personal protective equipment as required.

P501

Dispose of contents/container in accordance with local regulations.

##### Supplementary Precautionary Statements

P201

Obtain special instructions before use.

P202

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

P282

Wear cold insulating gloves/face shield/eye protection.

P308+313

IF exposed or concerned: Get medical advice/attention.



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P405

Store locked up.

**2.3. Other hazards**

Not Classified as PBT/vPvB by current EU criteria.

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.2. Mixtures**

Mono Propylene Glycol		85-99%
CAS-No.: 57-55-6	EC No.: 200-338-0	Registration Number: 01-2119456809-23-xxxx
Classification (EC 1272/2008) Not classified.		Classification (67/548/EEC) Not classified.
2-ETHYLHEXANOIC ACID		1-5%
CAS-No.: 149-57-5	EC No.: 205-743-6	Registration Number: 01-2119488942-23-xxxx
Classification (EC 1272/2008) Repr. 2 - H361d		Classification (67/548/EEC) Repr. Cat. 3;R63
Potassium Hydroxide		0.1-1.0%
CAS-No.: 1310-58-3	EC No.: 215-181-3	Registration Number: 01-2119487136-33-xxxx
Classification (EC 1272/2008) Met. Corr. 1 - H290 Acute Tox. 4 - H302 Skin Corr. 1A - H314		Classification (67/548/EEC) Xn;R22. C;R35.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

**REACH Registration notes**

This material is a mixture. All components have been registered under REACH by the Manufacturer or Supplier.

**Composition Comments**

The potassium hydroxide and 2- ethylhexanoic acid are neutralised in the formulation so that although they are both corrosive materials the final formulation is non-corrosive

**SECTION 4: FIRST AID MEASURES****4.1. Description of first aid measures****General information**

CAUTION! First aid personnel must be aware of own risk during rescue!

Remove affected person from source of contamination.

General first aid, rest, warmth and fresh air.

**Inhalation**

Remove victim immediately from source of exposure.

In case of inhalation of spray mist: Move person into fresh air and keep at rest.

When breathing is difficult, properly trained personnel may assist affected person by administering oxygen.

Get medical attention if any discomfort continues.

**Ingestion**

Rinse mouth thoroughly.

Do not give victim anything to drink if he is unconscious.

Get medical attention immediately!

**Skin contact**

Remove contaminated clothing.

Wash skin with soap and water.

Get medical attention if any discomfort continues.

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### Eye contact

Promptly wash eyes with plenty of water while lifting the eye lids.  
Make sure to remove any contact lenses from the eyes before rinsing.  
Continue to rinse for at least 15 minutes.  
Get medical attention if any discomfort continues.

### 4.2. Most important symptoms and effects, both acute and delayed

#### Inhalation

Exposure to high concentrations may cause dizziness, headache, dry / sore throat, coughing Hot vapours may cause lung damage

#### Ingestion

May cause discomfort if swallowed.

#### Skin contact

Prolonged contact may cause redness, irritation and dry skin.

#### Eye contact

May cause temporary eye irritation.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat Symptomatically.

## SECTION 5: FIREFIGHTING MEASURES

### 5.1. Extinguishing media

#### Extinguishing media

Stop flow of material to fire.  
Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

#### Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

### 5.2. Special hazards arising from the substance or mixture

#### Unusual Fire & Explosion Hazards

Heat may cause the containers to explode.

#### Specific hazards

Fire creates:  
Carbon dioxide (CO<sub>2</sub>).  
Carbon monoxide (CO).

### 5.3. Advice for firefighters

#### Special Fire Fighting Procedures

Avoid breathing fire vapours.  
Use water to keep fire exposed containers cool and disperse vapours.  
Keep run-off water out of sewers and water sources. Dike for water control.  
If possible, fight fire from protected position.  
Move container from fire area if it can be done without risk.  
Avoid water in straight hose stream; will scatter and spread fire.

#### Protective equipment for fire-fighters

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet.  
In case of spills, beware of slippery floors and surfaces.

### 6.2. Environmental precautions

Do not discharge into drains, water courses or onto the ground.

### 6.3. Methods and material for containment and cleaning up

Stop leak if possible without risk.  
Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.  
Wear necessary protective equipment.  
Absorb in vermiculite, dry sand or earth and place into containers.  
Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

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## 6.4. Reference to other sections

Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for safe handling

Do not use in confined spaces without adequate ventilation and/or respirator.

Eliminate all sources of ignition.

Keep away from heat, sparks and open flame.

Avoid inhalation of vapours.

Avoid acids, moisture, and combustible materials.

Spills can make walking difficult and surfaces slippery. Absorb into granular medium.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in tightly closed original container in a dry, cool and well-ventilated place.

Keep away from heat, sparks and open flame.

Hydroscopic.

Keep out of direct sunlight

Store in closed original container at temperatures between 0°C and 40°C.

Maximum storage period: 2 years

### 7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
Mono Propylene Glycol	WEL	150 ppm	474 mg/m3			
PXLC5	WEL	474 No std.		mg/m3		

WEL = Workplace Exposure Limit.

#### Ingredient Comments

WEL = Workplace Exposure Limits



**PXLC5****2-ETHYLHEXANOIC ACID (CAS: 149-57-5)**

<b>DNEL</b>					
Industry	Dermal	Long Term	Systemic Effects	12 mg/kg/day	
Industry	Inhalation.	Long Term	Systemic Effects	32 mg/m3	
Consumer	Dermal	Long Term	Systemic Effects	6 mg/kg/day	
Consumer	Inhalation.	Long Term	Systemic Effects	8 mg/m3	
Consumer	Oral	Long Term	Systemic Effects	2.5 mg/kg/day	
<b>PNEC</b>					
Freshwater	0.36	mg/l			
Marinewater	0.036	mg/l			
STP	71.7	mg/l			
Sediment	6.37	mg/kg			
Soil	1.06	mg/kg			
Intermittent release	0.493	mg/l			
Sediment (Marinewat	0.637	mg/kg			

**Mono Propylene Glycol (CAS: 57-55-6)****Ingredient Comments**

WEL = Workplace Exposure Limits

<b>DNEL</b>					
Industry	Inhalation.	Long Term	Systemic Effects	168 mg/m3	
Industry	Inhalation.	Long Term	Local Effects	10 mg/m3	
Consumer	Inhalation.	Long Term	Systemic Effects	50 mg/m3	
Consumer	Inhalation.	Long Term	Local Effects	10 mg/m3	
<b>PNEC</b>					
Freshwater	260	mg/l			
Marinewater	26	mg/l			
STP	20000	mg/l			
Sediment Freshwater	572	mg/kg			
Sediment Marinewate	57.2	mg/kg			
Soil	50	mg/kg			
Intermittent release	183	mg/l			

**Potassium Hydroxide (CAS: 1310-58-3)****Ingredient Comments**

WEL = Workplace Exposure Limits

<b>DNEL</b>					
Industry	Inhalation.	Long Term	Local Effects	1 mg/m3	
Consumer	Inhalation.	Long Term	Local Effects	1 mg/m3	
No PNEC available					

**8.2. Exposure controls****Protective equipment****Engineering measures**

Must not be handled in confined space without sufficient ventilation.

Provide adequate general and local exhaust ventilation.

**Respiratory equipment**

If ventilation is insufficient, suitable respiratory protection must be provided.

Chemical respirator with organic vapour cartridge.

**Hand protection**

Chemical resistant gloves required for prolonged or repeated contact.

The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Butyl rubber gloves are recommended.

PVC gloves are recommended.

Nitrile gloves are recommended.

Polyethylene gloves are recommended.

**Eye protection**

Wear approved safety goggles.

**Other Protection**

Wear suitable protective clothing as protection against splashing or contamination.

**Hygiene measures**

Wash hands at the end of each work shift and before eating, smoking and using the toilet.

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Wash promptly with soap & water if skin becomes contaminated.  
DO NOT SMOKE IN WORK AREA!

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Appearance	Liquid Viscous
Colour	Colourless.
Odour	Odourless.
Solubility	Soluble in water.
Initial boiling point and boiling range (°C)	155 - 199°C 760 mm Hg
Melting point (°C)	<-60°C
Relative density	1.050 @ 25°C
Vapour density (air=1)	2.6
Vapour pressure	<0.1 mmHg @ 21°C
Viscosity	46 mPas @ 25°C
Solubility Value (G/100G H <sub>2</sub> O@20°C)	100
Flash point (°C)	103°C CC (Closed cup).
Auto Ignition Temperature (°C)	371°C
Flammability Limit - Lower(%)	2.4
Flammability Limit - Upper(%)	17.4
Partition Coefficient (N-Octanol/Water)	-1.07
Method: OECD TG 107	
Comments	Information given concerns the major ingredient.

### 9.2. Other information

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

No particular stability concerns. The substance is hygroscopic and will absorb water by contact with the moisture in the air.

### 10.3. Possibility of hazardous reactions

#### Hazardous Polymerisation

Will not polymerise.

### 10.4. Conditions to avoid

Avoid exposure to high temperatures or direct sunlight.

### 10.5. Incompatible materials

#### Materials To Avoid

Strong oxidising substances. Strong acids. Strong alkalis.

### 10.6. Hazardous decomposition products

Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

#### Toxicological information

Toxicological information on major component only.

#### Acute toxicity:



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### Acute Toxicity (Oral LD50)

22000 mg/kg Rat

Low acute toxicity by the oral route OECD 401

### Acute Toxicity (Dermal LD50)

> 2000 mg/kg Rabbit

Low acute toxicity by the dermal route OECD 402

### Acute Toxicity (Inhalation LC50)

317042 mg/l (vapours) Rabbit

Low acute toxicity by the inhalation route OECD 403 2 hours

### Skin Corrosion/Irritation:

OECD 404

Not irritating.

Clinical human dermal patch study

Slightly irritating.

### Serious eye damage/irritation:

Not Irritating. OECD 405

### Respiratory or skin sensitisation:

#### Respiratory sensitisation

Not relevant

#### Skin sensitisation

Local Lymph Node Assay (LLNA) Mouse

Not Sensitising.

### Germ cell mutagenicity:

#### Genotoxicity - In Vitro

Chromosome aberration:

OECD Guideline 475

Negative.

This substance has no evidence of mutagenic properties.

#### Genotoxicity - In Vivo

Bacterial Reverse Mutation Test

Method equivalent or similar to OECD 471

Negative.

This substance has no evidence of mutagenic properties.

### Carcinogenicity:

#### Carcinogenicity

NOAEL 1700 mg/kg Oral Rat

This substance has no evidence of carcinogenic properties.

### Reproductive Toxicity:

#### Reproductive Toxicity - Fertility

Two-generation study: NOAEL 10100 mg/kg/day Mouse

Method OECD 416

This substance has no evidence of toxicity to reproduction.

#### Reproductive Toxicity - Development

Developmental toxicity: NOAEL 10400 mg/kg/day Mouse

Method OECD 414

A component in the mixture is classified as reprotoxic for development - under the CLP regulations, the mixture also requires classification due to the amount present in the mixture

### Specific target organ toxicity - repeated exposure:

#### STOT - Repeated exposure

NOAEL 1700 mg/kg Oral Rat

### Inhalation

Upper respiratory irritation.

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## Skin contact

Prolonged contact may cause dryness of the skin. May cause defatting of the skin, but is not an irritant. Not a skin sensitiser.

## Eye contact

May cause temporary eye irritation.

## Target Organs

Skin

## Medical Considerations

Pre-existing eye problems.

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## SECTION 12: ECOLOGICAL INFORMATION

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### Ecotoxicity

Not regarded as dangerous for the environment. Ecotoxicological data on main component only

### 12.1. Toxicity

#### Acute Toxicity - Fish

LC50 96 hours 40613 mg/l *Onchorhynchus mykiss* (Rainbow trout)

#### Acute Toxicity - Aquatic Invertebrates

EC50 48 hours 18340 mg/l Freshwater invertebrates

Species: *Ceriodaphnia Dubia* (water flea) Method: EPA 600/4-90-027

#### Acute Toxicity - Aquatic Plants

EC50 96 hours 19000 mg/l *Selenastrum capricornutum*

OECD 201

EC50 96 hours 19100 mg/l

*Skeletonema costatum*

#### Acute Toxicity - Microorganisms

NOEC > 20000 mg/l

*Pseudomonas putida*, 18 hr

#### Chronic Toxicity - Fish Early life Stage

2500 mg/l Freshwater fish

30 days

#### Chronic Toxicity - Aquatic Invertebrates

NOEC 13020 mg/l

*Ceriodaphnia* (water flea), static renewal, 7d Method: EPA 600/4-89/001

### 12.2. Persistence and degradability

#### Degradability

The product is easily biodegradable. The product has proven to be degradable under anaerobic conditions.

#### Phototransformation

Air, DT50 0.83 days

Method: AOPWIN v1.92

#### Biodegradation

Water Degradation (81%) 28 days

Test - 301F Ready Biodegradability - Manometric Respiratory Test

Water Degradation (96%) 64 days

### 12.3. Bioaccumulative potential

#### Bioaccumulative potential

Not expected to bioaccumulate

#### Bioaccumulation factor

BCF ~ 0.09

Partition coefficient -1.07

Method: OECD TG 107

### 12.4. Mobility in soil

#### Mobility:

The product is soluble in water.

#### Henry's Law Constant

0.000000012 atm m<sup>3</sup>/mol

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**Surface tension**

71.6 mN/m

**12.5. Results of PBT and vPvB assessment**

Not Classified as PBT/vPvB by current EU criteria.

**12.6. Other adverse effects**

None known.

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**SECTION 13: DISPOSAL CONSIDERATIONS**

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**General information**

When handling waste, consideration should be made to the safety precautions applying to handling of the product.

Waste is suitable for incineration.

**13.1. Waste treatment methods**

This material must be disposed of via an Authorised Waste/Disposal Company in accordance with Local and or National Waste Disposal Regulations.

**Waste Class**

The user must be aware that the waste category of this product may be affected by the conditions of use. Please refer to Directive 2001/118/EC for waste nomenclature.

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**SECTION 14: TRANSPORT INFORMATION**

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**General**

The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

**14.1. UN number**

Not applicable.

**14.2. UN proper shipping name****14.3. Transport hazard class(es)**

ADR/RID/ADN Class Not classified for transportation.

**14.4. Packing group**

ADR/RID/ADN Packing group None

**14.5. Environmental hazards**

Environmentally Hazardous Substance/Marine Pollutant

No.

**14.6. Special precautions for user**

EMS None

Hazard No. (ADR) Not relevant

**14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

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**SECTION 15: REGULATORY INFORMATION**

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**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****Uk Regulatory References**

The Control of Substances Hazardous to Health Regulations 2002 (S.I 2002 No. 2677) with amendments.

Health and Safety at Work Act 1974.

**Statutory Instruments**

Control of Substances Hazardous to Health.

**Guidance Notes**

Workplace Exposure Limits EH40.



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**EU Legislation**

Dangerous Substance Directive 67/548/EEC.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

**15.2. Chemical Safety Assessment**

No chemical safety assessment has been carried out. This substance does not meet the criteria for human health or environmental classification. In addition, this substance does not meet PBT/vPvB criteria. Therefore no exposure scenarios are required.

**SECTION 16: OTHER INFORMATION****Revision Comments**

Classification in line with CLP End uses updated

**Issued By** PCL Technical Team

**Revision Date** 17/02/2014

**Revision** 7

**Supersedes date** 11/02/2014

**SDS No.** 11356

**Safety Data Sheet Status** Approved.

**Date** 28/11/2008

**Risk Phrases In Full**

R35	Causes severe burns.
R22	Harmful if swallowed.
NC	Not classified.
R63	Possible risk of harm to the unborn child.

**Hazard Statements In Full**

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H361d	Suspected of damaging the unborn child.

**Disclaimer**

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.