

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

SECTION 1. IDENTIFICATION

Product name : PTM-SMK

Number : 000000025907

Product Use Description : Thermal interface material

Manufacturer or supplier's details : Honeywell International Inc.
115 Tabor Road
Morris Plains, NJ 07950-2546

For more information call : +1-509-252-2200(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701 or +1-303-389-1414
: Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : paste

Color : grey

Odor : slight

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 4
Aspiration hazard, Category 1

GHS Label elements, including precautionary statements

PTM-SMK

000000025907

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Symbol(s)

:



Signal word

: Danger

Hazard statements

: Combustible liquid.
May be fatal if swallowed and enters airways.

Precautionary statements

: **Prevention:**
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Wear protective gloves/ protective clothing/ eye protection/ face protection.**Response:**

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

Do NOT induce vomiting.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:Store in a well-ventilated place. Keep cool.
Store locked up.**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature

: Mixture

Chemical name

CAS-No.

Concentration

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Aluminum	7429-90-5	40.00 - 95.00 %
Proprietary ingredient	-	0.00 - 45.00 %
Solvent	-	0.00 - 15.00 %
Polymer	-	1.00 - 10.00 %

SECTION 4. FIRST AID MEASURES

- Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician if irritation develops or persists.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.
- Ingestion : Do NOT induce vomiting. Immediate medical attention is required. If victim is fully conscious, give a cupful of water. Call a physician.

Notes to physician

- Indication of immediate medical attention and special treatment needed, if necessary : Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical
Carbon dioxide (CO₂)

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

	Water spray
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) Aluminum oxides
Special protective equipment for firefighters	: Wear self-contained breathing apparatus and protective suit.
Further information	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Wear personal protective equipment. Evacuate personnel to safe areas. Eliminate all ignition sources if safe to do so. Do not swallow. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Environmental precautions	: Should not be released into the environment. Prevent further leakage or spillage if safe to do so.
Methods and materials for containment and cleaning up	: Ventilate the area. Avoid dust formation. Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE**Handling**

Precautions for safe handling	: Handle with care. Wear personal protective equipment. Avoid dust formation.
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PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Do not swallow.
 Avoid breathing vapours, mist or gas.
 Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Avoid dust formation.
 Normal measures for preventive fire protection.

Storage

Conditions for safe storage, including any incompatibilities : Keep containers tightly closed in a dry, cool and well-ventilated place.
 Keep away from heat and sources of ignition.
 Keep away from direct sunlight.
 Protect from physical damage.
 Store away from incompatible substances.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
 Avoid dust formation.
 Do not swallow.
 Avoid breathing dust.
 Avoid contact with skin, eyes and clothing.

Engineering measures : Ensure adequate ventilation.

Eye protection : Safety glasses with side-shields
 For leak, spill or other emergency:
 Goggles or face shield, giving complete protection to eyes

Hand protection : Protective gloves
 Gloves must be inspected prior to use.
 Replace when worn.

Skin and body protection : Apron
 Protective suit
 If splashes are likely to occur, wear:
 Complete suit protecting against chemicals

Respiratory protection : No personal respiratory protective equipment normally required.

PTM-SMK

00000025907

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
 Avoid dust formation.
 When using, do not eat, drink or smoke.
 Wash hands before breaks and immediately after handling the product.
 Remove and wash contaminated clothing before re-use.
 Keep working clothes separately.
 Do not swallow.
 Avoid breathing vapours, mist or gas.
 Avoid contact with skin, eyes and clothing.

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
Aluminum	7429-90-5	TWA : Time weighted average	1 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
Further information	:	Form of exposure : Respirable fraction.			
Aluminum	7429-90-5	PEL : Permissible exposure limit	15 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Further information	:	Form of exposure : Total dust. Expressed as : as Al			
Aluminum	7429-90-5	PEL : Permissible exposure limit	5 mg/m3	03 2016	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Further information	:	Form of exposure : Respirable fraction. Expressed as : as Al			

SAFETY DATA SHEET



PTM-SMK

00000025907

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Aluminum	7429-90-5	TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Fume. Expressed as : as Al			
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Aluminum	7429-90-5	TWA : Time weighted average	15 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Total dust. Expressed as : as Al			
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Aluminum	7429-90-5	TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Respirable dust. Expressed as : as Al			
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Aluminum	7429-90-5	TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Pyrophoric powder. Expressed as : as Al			
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Aluminum	7429-90-5	REL : Recomm ended exposure limit (REL):	10 mg/m3	2016	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Total			
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SAFETY DATA SHEET

Honeywell**PTM-SMK****000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Aluminum	7429-90-5	REL : Recomm ended exposure limit (REL):	5 mg/m3	2016	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Respirable.			
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Aluminum	7429-90-5	REL : Recomm ended exposure limit (REL):	5 mg/m3	2016	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Welding fume or pyrophoric powder. Expressed as : as Al			
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Aluminum	7429-90-5	TWA : Time weighted average	15 mg/m3	03 2016	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Total dust.			
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Aluminum	7429-90-5	TWA : Time weighted average	5 mg/m3	03 2016	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Respirable fraction.			
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Aluminum	7429-90-5	TWA : Time weighted average	50 millions of particles per cubic foot of air	03 2016	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Total dust.			
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SAFETY DATA SHEET

Honeywell**PTM-SMK****00000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Aluminum	7429-90-5	TWA : Time weighted average	15 millions of particles per cubic foot of air	03 2016	Z3:US. OSHA Table Z-3 (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Respirable fraction.			
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Zinc oxide	1314-13-2	STEL : Short term exposure limit	10 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : Respirable fraction.			
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Zinc oxide	1314-13-2	TWA : Time weighted average	2 mg/m3	2008	ACGIH:US. ACGIH Threshold Limit Values, as amended
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Further information	:	Form of exposure : Respirable fraction.			
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Zinc oxide	1314-13-2	REL : Recomm ended exposure limit (REL):	5 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Fume.			
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Zinc oxide	1314-13-2	REL : Recomm ended exposure limit (REL):	5 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
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Further information	:	Form of exposure : Dust.			
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SAFETY DATA SHEET

Honeywell**PTM-SMK****000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Zinc oxide	1314-13-2	Ceil_Tim e : Ceiling Limit Value and Time Period (if specified) :	15 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Further information	:	Form of exposure : Dust.			

Zinc oxide	1314-13-2	STEL : Short term exposure limit	10 mg/m3	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Further information	:	Form of exposure : Fume.			

Zinc oxide	1314-13-2	PEL : Permissi ble exposure limit	5 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Further information	:	Form of exposure : Fume.			

Zinc oxide	1314-13-2	PEL : Permissi ble exposure limit	5 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Further information	:	Form of exposure : Respirable fraction.			

SAFETY DATA SHEET

Honeywell**PTM-SMK****00000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Zinc oxide	1314-13-2	PEL : Permissible exposure limit	15 mg/m3	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Total dust.			
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Zinc oxide	1314-13-2	STEL : Short term exposure limit	10 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Fume.			
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Zinc oxide	1314-13-2	TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Fume.			
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Zinc oxide	1314-13-2	TWA : Time weighted average	5 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Respirable fraction.			
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Zinc oxide	1314-13-2	TWA : Time weighted average	10 mg/m3	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
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Further information	:	Form of exposure : Total dust.			
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SAFETY DATA SHEET

Honeywell**PTM-SMK****00000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Naphtha (petroleum), hydrotreated heavy	64742-48-9	REL : Recomm ended exposure limit (REL):	400 mg/m3 (100 ppm)	2010	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Naphtha (petroleum), hydrotreated heavy	64742-48-9	PEL : Permissi ble exposure limit	400 mg/m3 (100 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
Naphtha (petroleum), hydrotreated heavy	64742-48-9	TWA : Time weighted average	400 mg/m3 (100 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: paste
Color	: grey
Odor	: slight
Odor threshold	: Note: No data available
pH	: Note: Not applicable
Freezing point	: Note: No data available
Boiling point/boiling range	: Note: No data available
Flash point	: > 142 °F (61 °C)
Evaporation rate	: Note: No data available

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Lower explosion limit	: Note: Not applicable
Upper explosion limit	: Note: Not applicable
Vapor pressure	: Note: No data available
Vapor density	: Note: No data available
Density	: at 20 °C Note: No data available
Water solubility	: Note: No data available
Partition coefficient: n-octanol/water	: Note: No data available
Ignition temperature	: Note: No data available
Decomposition temperature	: Note: No data available
Viscosity, dynamic	: Note: No data available
Viscosity, kinematic	: Note: No data available
Oxidizing properties	: The substance or mixture is not classified as oxidizing.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under normal conditions.

PTM-SMK**00000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Keep away from heat and sources of ignition. Keep away from direct sunlight.
Incompatible materials	: Oxidizing agents Peroxides Chlorates, inorganic, n.o.s. Perchlorates permanganates, for example potassium permanganate Nitrates Reducing agents Acids
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Carbon monoxide Carbon dioxide (CO ₂) Aluminum oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	: LD50: 10,000 mg/kg Species: Rat Test substance: Wax.
	: LD50: > 5,000 mg/kg Species: Rat Test substance: Resin
Acute inhalation toxicity	: Note: No data available
Acute dermal toxicity	: LD50: > 3,600 mg/kg Species: Rabbit Test substance: Wax.
	: LD50: > 3,160 mg/kg Species: Rabbit

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Test substance: Resin

Skin irritation : Note: No data available

Eye irritation : Note: No data available

Sensitisation : Note: Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Repeated dose toxicity : Note: No data available

Genotoxicity in vitro : Note: No data available

Genotoxicity in vivo : Note: No data available

Aspiration toxicity : May be fatal if swallowed and enters airways.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : Note: No data available

Toxicity to daphnia and other aquatic invertebrates : Note: No data available

Toxicity to algae : Note: No data available

Toxicity to bacteria : LC50:
Species: not specified
Note: No data available**Further information on ecology**

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : NA 1993
Proper shipping name : Combustible liquid, n.o.s.
Class CBL
Packing group III
Hazard Labels NONE
Required only for US-DOT Bulk Shipments

TDG Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

Australia. Industrial Chemicals Act (AICC), as amended : Not in compliance with the inventory

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : This product contains one or several components listed in the Canadian NDSL.

Japan. Kashin-Hou Law List : Not in compliance with the inventory

Korea. Existing Chemicals : On the inventory, or in compliance with the inventory

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

Inventory (KECI)

Philippines. Inventory of Chemicals and Chemical Substances (PICCS) : Not in compliance with the inventory

China. Inventory of Existing Chemical Substances (IECSC) : Not in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

National regulatory information

SARA 302 Components : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:
: Aluminum 7429-90-5

SARA 311/312 Hazards : Acute Health Hazard
Fire Hazard

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : Aluminum 7429-90-5

New Jersey RTK : Aluminum 7429-90-5

Pennsylvania RTK : Aluminum 7429-90-5

PTM-SMK**000000025907**

Version 1.0

Revision Date 11/04/2021

Print Date 11/23/2021

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 1	1
Flammability	: 2	2
Physical Hazard	: 0	
Instability	:	0

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further 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. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group