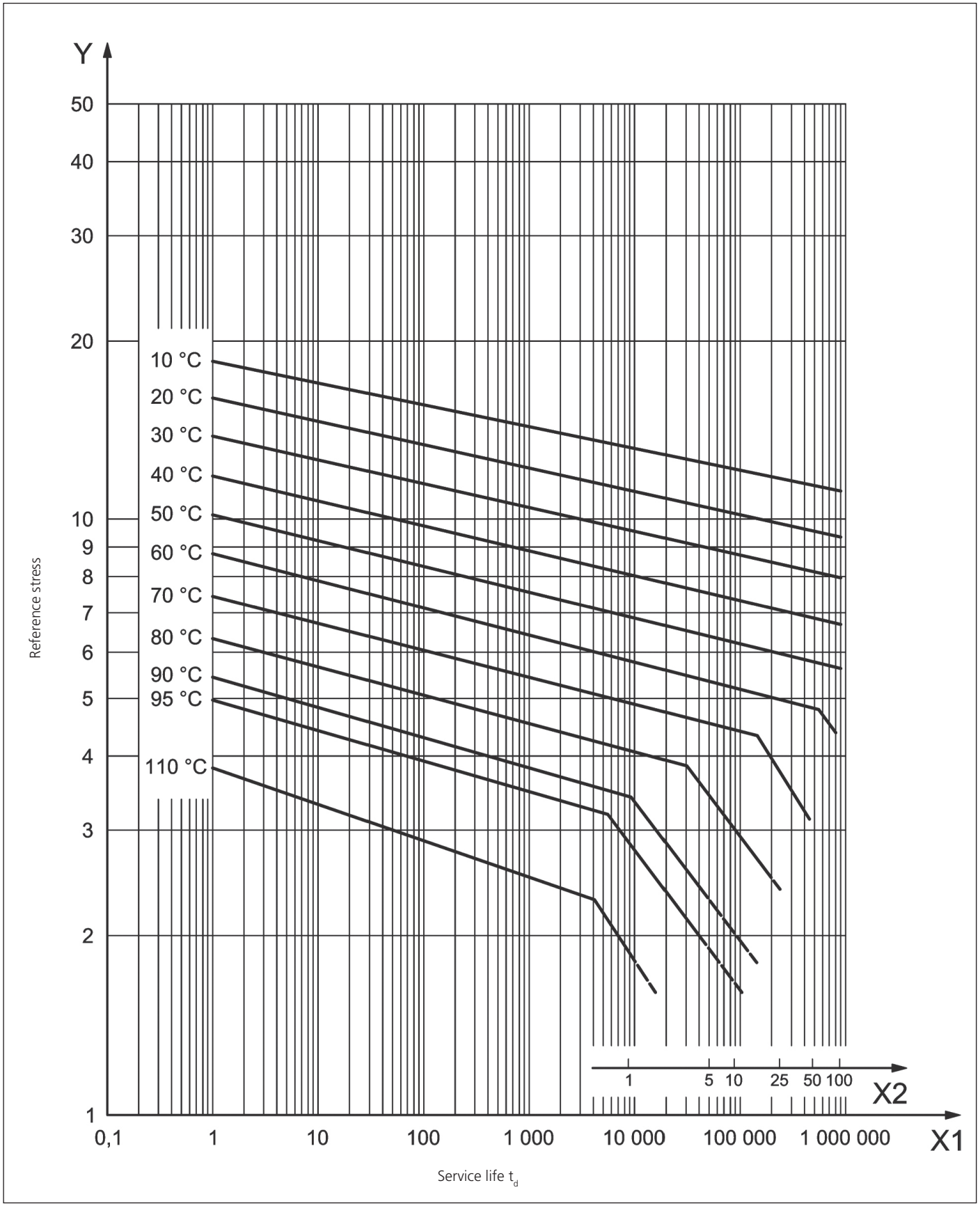
Appendix A1
References for PP-R



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Appendix A

Appendix A2
Polypropylene
RA130E-6017

1. Identification of the substance/mixture and of the company/ undertaking
Trade name: RA130E-6017

Material use: Raw material for plastics industry

Manufacturer: Borealis

E-mail address: product.safety@borealisgroup.com

2. Hazards identification
Health: The product is not classified as dangerous. Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

Fire: The product burns, but is not classified as flammable.

Environment: The product is not considered dangerous for the environment.

3. Composition/information on ingredients
The product is a polypropylene polymer. Contains no substance classified as hazardous in concentrations, which should be taken into account according to EC directives.

4. First aid measures
No specific instructions needed.

Skin contact: Cool melted product on skin with plenty of water. Do not remove solidified product.

5. Fire-fighting measures
Suitable extinguishing media: Water in spread jet, dry chemicals, foam or carbon dioxide.

Special exposure hazards: Principal toxicant in the smoke is carbon monoxide.

6. Accidental release measures
Vacuum or sweep up spill. All spill of material must be removed immediately to prevent slipping accidents.

7. Handling and storage
Handling: During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released. Provide adequate ventilation. Local exhaust ventilation may be necessary. Avoid inhalation of dust and decomposition fumes. Dust from the product gives a potential risk for dust explosion. All equipment shall be grounded.

Storage: Safety aspects do not require any special precautions in terms of storage.

8. Exposure controls/personal protection
Provide adequate ventilation. Local exhaust ventilation may be necessary.

9. Physical and chemical properties
Appearance: solid, green

Odour: odourless

Melting point/range: 130-170°C

Density: 0,9-1,0 g/cm³

Ignition temperature: >320°C

Solubility(ies): insoluble in water

10. Stability and reactivity
The product is a stable thermoplastic, with no chemical reactivity.

11. Toxicological information
The product is not classified as hazardous according to Regulation (EC). 1272/2008 Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

12. Ecological information
The product is not considered dangerous for the environment.

13. Disposal considerations
Reuse or recycle if not contaminated. The product may be safely used as fuel. Proper combustion does not require any special flue gas control. Check with local regulations.

14. Transport information
The product is not regulated by ADR/RID, IMDG or IATA.

15. Regulatory information
In accordance with Regulation (EC) 1272/2008, the product does not need to be classified nor labelled.

Label:
Trade name: RA130E-6017
Manufacturer: Borealis

16. Other information
Issued in accordance with Article 32 of Regulation (EC) No 1907/2006, and its amendments.

Issuer: Borealis, Group Product Stewardship 18.05/2015 Ed. 3.

Appendix A3
Polypropylene
RA130E-6017

Statement on compliance to regulations for drinking water pipes
We confirm that this product and the monomers, additives and (if present) pigments used for its manufacturing are in compliance with the requirements of the following legislation:

Austria
Kunststoffverordnung Nr. 476/2003 und Änderungen 242/2005, 452/2006, 325/2007, 140/2009, 196/2010 und 45/2011.

Czech Republic
Vyhlaska Ministerstva zdravotnictvi c. 409/2005 Sb as amended.

EU
Regulation (EC) No 1935/2004 - so far applicable to polymer pellets. The organoleptic characteristics of food contact materials are influenced by converting conditions, time and temperature of storage and type of food, therefore compliance with article 3 must be verified and tested by the producer of the final packing material. Commission Regulation (EU) 2011/10 as amended. Commission Regulation (EC) 1895/2005 - BADGE, NOGE and BFDGE are not used for the production of this grade Commission Regulation (EC) 2023/2006. This material has been manufactured in accordance with the relevant requirements of good manufacturing practice for materials articles intended to come into contact with food, as described in more detail in the Borealis statement 'Food hygiene demands and standards'.

Finland
Maa-ja metsätalousministeriön asetus 497/2011 (referring to regulation EU2011/10).

France
Brochure No. 1227 (2002), et srrêté du 02.02.2003, tel que modificié incl. Arrêté du 09.12.13.

Germany
Bedarfgegenständeverordnung vom 23.12.1997 in der Fassung vom 24.06.2013 (referring to regulation EU 2011/10), and Empfehlung des Umweltbundesamtes: Leitlinie zur hygienischen Beurteilung von organischen Materialien in Kontakt mit Trinkwasser (KTW-Leitlinie), Tabelle 1 'Kunststoffe', Stand: 07.03.2016.

Italy
Decreto Ministeriale 06.04.2004 N. 174.

The Netherlands
Staatstoezicht op de Volksgezondheid. Publikatie 94-01, Deel B, 1.3. Polypropeen.

Norway
Sosial- og helsedepartementets forskrift 1993-12-21-1381 (referring to regulation EU 2011/10).

Spain
Real Decreto 118/2003, R.D.1262/2005, SCO/3508/2006 y ANAIP (1982), Anexo 1, Anexo 4.

Sweden
Statens Livsmedelsverks kungörelse LIVSFS 2011:7 (referring to regulation EU 2011/10).

Switzerland
Verordnung der EDI über Bedarfsgegenstände vom 23.11.2005 (817.023.21); Stand 01.04.2013, 3. Abschnitt Bedarfsgegenstände aus Kunststoff.

USA
FDA, CFR, Title 21, 177.1520 (a)(3)(i)(c)(1), (b) and (c)3.1a Olefin polymers.

National approvals
This statement is no warranty, that articles, made from this material and intended to be used in contact with drinking water, will fit the technical requirements as defined in the approval schemes of the above listed countries.

Materials and articles intended to be used in contact with drinking water in many countries have to be approved by authorised national laboratories. For that purpose Borealis is prepared to provide those laboratories detailed information on the composition of this grade on request.

Prepared by: Borealis, Group Product Stewardship 28.09.16 Ed. 16.

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Appendix A

Appendix A4
Polypropylene
RA130E-6017

Statement on chemicals, regulations and standards

We certify that during manufacturing of this product we do not use or intentionally add any of the chemicals restricted by the following regulations and standards and their subsequent amendments in amounts which exceed the applicable limits.

- Annex XVII of the REACH Regulation 1907/2006/EC (superseding Directive 76/769/EEC) - Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles
- Directive 2000/53/EC (End of life vehicles - ELV) - Cr(VI), Hg and Pb < 0.1 wt%, Cd < 0.01 wt%)
- Directive 2011/65/EU (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment - ROHS) - Cr(VI), Hg, Pb, PBB, PBDE, DEHP, BBP, DBP, DIBP < 0.1 wt%, Cd < 0.01 wt%
- Directive 2012/19/EU (Waste Electrical & Electronic Equipment - WEEE, repealing 2002/96/EC) - Annex VII - No ingredients used which require selective waste treatment (As, Hg, PCB, PCT, CFC, HCFC, HFC, brominated FR)
- Chemicals List of Proposition 65 of the State of California and subsequent amendments, as known to the State of California to cause cancer or reproductive toxicity
- Regulation 1005/2009/EC (Substances that deplete the ozone layer) - Prohibition of CFC's, HCFC's, Halons, CCl4, Trichloroethane, HBFC's
- US Clean Air Act, Title VI, Classes I and II (EPA Final Rule; Federal Register 8136, 11.2.1993) on substances that deplete the ozone layer
- Regulation 850/2004/EC on persistent organic pollutants (POPs)
- Global Automotive Declarable Substance List (GADSL) and VDA232-101 - No use of prohibited or declarable substances above threshold limits
- Swiss SR 814.018 (Verordnung über die Lenkungsabgabe auf flüchtigen organischen Verbindungen - VOCV) - VOC's according to Annexes 1 & 2 < 3 wt%
- Japanese CSCL; Class I and II Specified Chemical Substances
- Japanese PRTR law; Class I or Class II Designated Chemical Substances.

Regarding classification of the above product according to REGULATION (EC) No 1272/2008 and its subsequent amendments, reference is made in the SDS/PSIS for the above product.

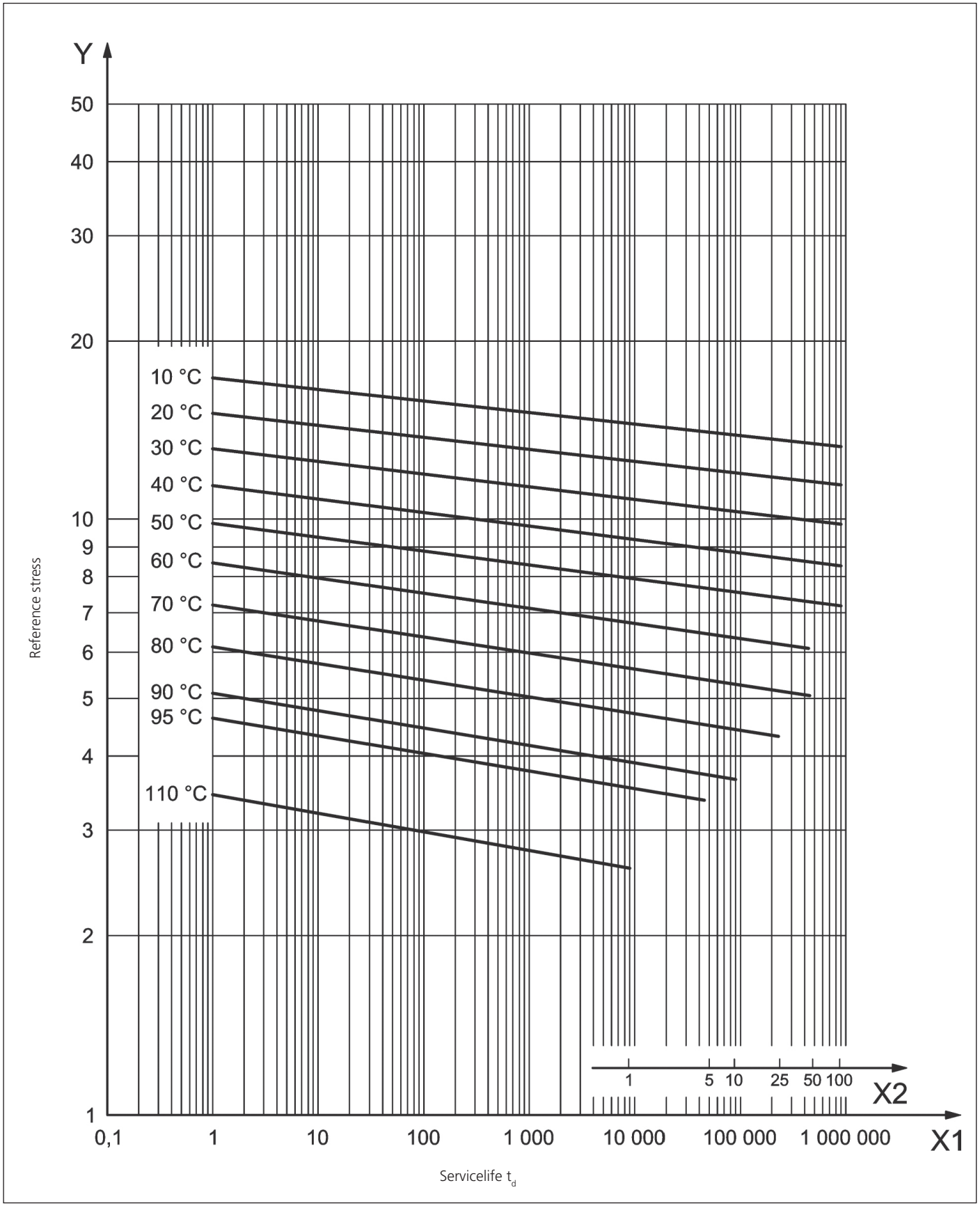
We also certify that during the manufacturing of the above product we do not use or intentionally incorporate into it any of the following materials:

Acrylamide
Aromatic Amines (restricted in Regulation 1907/2006/EC, Annex XVII)
Arsenic, Beryllium, Bismuth
Artificial Musks
Asbestos
Azocolorants (restricted in Regulation 1907/2006/EC, Annex XVII)
Azodicarbonamide, semicarbazide
Benzophenones (e.g. 4-MBP, 4-HBP, 2,2´-Dimethoxy-2-phenylacetophenone)
Biocides (Pesti-, Herbi-, Insecti-, Fungi-, Bactericides)
Brominated flame retardants (e.g. PBB, PBDE)
Cadmium, Chromium (VI), Lead, Mercury
CFC, HCFC
Colophony (rosin)
4,4'- Diaminodiphenylmethane (MDA)
Di-2-ethyl-hexyl maleate (DEHM)
Dimethylfumarate (DMF), Dibutylfumarate
1,4-Dioxane
2-Ethylhexanoic acid, Ethoxyquin, ITX, Thiurams
Formaldehyde
Fragrances
Furfural
Genetically modified materials (GMO)
Glycol ethers (EGME, EGMEA, EGEE, EGEEA)
Glyoxal
Gold, Indium, Palladium
Melamine, Cyanuric acid
Natural rubbers, Latex
Nitrosamines, Nitrates, Nitrites
Octyl- and Nonylphenols and Octyl- or Nonylphenolethoxylates; TNPP
Organotin compounds
Parabens PBT and vPvB substances according to EC Regulation No.1907/2006 (REACH)
Pentachlorophenol (PCP)
PFOA, PFOS
Plasticisers (e.g. Adipates, ESBO, Phthalates*)
Polychlorinated Bi-, Terphenyls and Naphthalenes
Polychlorinated dibenzodioxins and dibenzofurans
Polycyclic aromatic hydrocarbons (PAH)
Radioactive substances
Recycled materials
Selenium, Silver, Tellurium, Thorium
Styrene SVHC on "Candidate List of Substances of Very High Concern for Authorisation"*
Thiuram mix
Tin, Gold, Tantalum, Tungsten
UV-hardeners (e.g. ITX, Titanyl-acetylacetone)
Vinylchloride, Vinylidenechloride, PVC or PVDC

*) DEP, DEHP or DIBP may be used in the catalyst system, which may result in traces of these phthalates in the product, typically in concentrations below 1 ppm.

24.08.2016 Ed. 19

Appendix A5
References fo PP-RCT



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Appendix A

Appendix A6
Polypropylene
RA7050-GN

1. Identification of the substance/mixture and of the company/ undertaking Trade name: RA7050-GN

Material use: Raw material for plastic industry

Manufacturer: Borealis

E-mail address: product.safety@borealisgroup.com

2. Hazards identification
Health: The product is not classified as dangerous preparation. Inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

Fire: The product burns, but is not classified as flammable.

Environment: The product is not considered dangerous for the environment.

3. Composition/information on ingredients
The product is a polypropylene polymer.
Contains no substance classified as hazardous in concentrations, which should be taken into account according to EC regulations.

4. First aid measures
No specific instruction needed.

Skin contact: Cool melted product on skin with plenty of water. Do not remove solidified product.

5. Fire-fighting measures
Suitable extinguishing media: Water in spread jet, dry chemicals, foam or carbon dioxide.

Special exposure hazards: Principal toxicant in the smoke is carbon monoxide.

6. Accidental release measures
Suck or sweep up spill. All spill of material must be removed immediately to prevent slipping accidents.

7. Handling and storage
Handling: During processing and thermal treatment of the product, small amounts of volatile hydrocarbons may be released. Provide adequate ventilation. Local exhaust ventilation may be necessary. Avoid inhalation of dust and decomposition fumes. Dust from the product gives a potential risk for dust explosion. All equipment shall be grounded.

Storage: Safety aspects do not require any special precautions in terms of storage.

8. Exposure controls/personal protection
Provide adequate ventilation. Local exhaust ventilation may be necessary.

9. Physical and chemical properties
Appearance: solid, green
Odour: odourless
Melting point/range: 130–170°C
Density: 0,9-1,0 g/cm³
Ignition temperature: >320°C
Solubility: insoluble in water

10. Stability and reactivity
The product is a stable thermoplastic, with no chemical reactivity.

11. Toxicological information
The product is not classified as hazardous according to Regulation (ED) No. 1272/2008. However, inhalation of dust may irritate the respiratory tract. Prolonged inhalation of high doses of decomposition products may give headache or irritation of the respiratory tract.

12. Ecological information
The product is not considered dangerous for the environment.

13. Disposal considerations
Reuse or recycle if not contaminated. The product may be safely used as fuel. Proper combustion does not require any special flue gas control. Check with local regulations.

14. Transport information
The product is not regulated by ADR/RID, IMDG or IATA.

15. Regulatory information
In accordance with Regulation (ED) No 1272/2008, the product does not need to be classified nor labelled.

Label:
Trade name: RA7050-GN
Manufacturer: Borealis

16. Other information
Issued in accordance with Article 32 of Regulation (EC) No 1907/2006, and it's amendments.

Issuer: Borealis Group Product Stewardship 14.03.2016 Ed. 14.

Appendix A7
Polypropylene
Beta-PPR RA7050-GN

General statement on compliance to food contact regulations

We confirm that this product fulfils the requirements on materials used for articles or components of articles intended to come into contact with food as described in

- Regulation (EC) No 1935/2004 - so far applicable for raw materials
- Commission Directive 2002/72/EC (as amended) and its national implementations
- FDA, CFR, Title 21 (2008) §177.1520 Olefin Polymers

The product contains substances (monomers and/or additives) with Specific Migration Limits (SML) or other restrictions.

As the information on these restricted substances is Borealis proprietary information, it only can be disclosed for the purpose of an assessment of the compliance with the relevant restrictions, after signing of a Non-disclosure.

Statement: the information will then be given in a more detailed Declaration of Compliance, which is not allowed to be forwarded to any third party.

Prepared by: Ed. 1 Borealis Group Product Stewardship 28/07/2008.

Appendix A

Appendix A8
Polypropylene
RA7050-GN

Statement on chemicals, regulations and standards

We certify that during manufacturing of this product we do not use or intentionally add any of the chemicals restricted by the following regulations and standards and their subsequent amendments in amounts which exceed the applicable limits.

- Annex XVII of the REACH Regulation 1907/2006/EC (superseding Directive 76/769/EEC) - Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles
- Directive 2000/53/EC (End of life vehicles - ELV) - Cr(VI), Hg and Pb < 0.1 wt%, Cd < 0.01 wt%)
- Directive 2011/65/EU (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment - ROHS) - Cr(VI), Hg, Pb, PBB, PBDE, DEHP, BBP, DBP, DIBP < 0.1 wt%, Cd < 0.01 wt%
- Directive 2012/19/EU (Waste Electrical & Electronic Equipment - WEEE, repealing 2002/96/EC) - Annex VII - No ingredients used which require selective waste treatment (As, Hg, PCB, PCT, CFC, HCFC, HFC, brominated FR)
- Chemicals List of Proposition 65 of the State of California and subsequent amendments, as known to the State of California to cause cancer or reproductive toxicity
- Regulation 1005/2009/EC (Substances that deplete the ozone layer) - Prohibition of CFC's, HCFC's, Halons, CCl4, Trichloroethane, HBFC's
- US Clean Air Act, Title VI, Classes I and II (EPA Final Rule; Federal Register 8136, 11.2.1993) on substances that deplete the ozone layer
- Regulation 850/2004/EC on persistent organic pollutants (POPs)
- Global Automotive Declarable Substance List (GADSL) and VDA232-101 - No use of prohibited or declarable substances above threshold limits
- Swiss SR 814.018 (Verordnung über die Lenkungsabgabe auf flüchtigen organischen Verbindungen - VOCV) - VOC's according to Annexes 1 & 2 < 3 wt%
- Japanese CSCL; Class I and II Specified Chemical Substances
- Japanese PRTR law; Class I or Class II Designated Chemical Substances

Regarding classification of the above product according to REGULATION (EC) No 1272/2008 and its subsequent amendments, reference is made in the SDS/PSIS for the above product.

We also certify that during the manufacturing of the above product we do not use or intentionally incorporate into it any of the following materials:

Acrylamide
Aromatic Amines (restricted in Regulation 1907/2006/EC, Annex XVII)
Arsenic, Beryllium, Bismuth
Artificial Musks
Asbestos
Azocolorants (restricted in Regulation 1907/2006/EC, Annex XVII)
Azodicarbonamide, semicarbazide
Benzophenones (e.g. 4-MBP, 4-HBP, 2,2´-Dimethoxy-2-phenylacetophenone)
Biocides (Pesti-, Herbi-, Insecti-, Fungi-, Bactericides)
Brominated flame retardants (e.g. PBB, PBDE)
Cadmium, Chromium (VI), Lead, Mercury
CFC, HCFC
Colophony (rosin)
4,4'- Diaminodiphenylmethane (MDA)
Di-2-ethyl-hexyl maleate (DEHM)
Dimethylfumarate (DMF), Dibutylfumarate
1,4-Dioxane
2-Ethylhexanoic acid, Ethoxyquin, ITX, Thiurams
Formaldehyde
Fragrances
Furfural
Genetically modified materials (GMO)
Glycol ethers (EGME, EGMEA, EGEE, EGEEA)
Glyoxal
Gold, Indium, Palladium
Melamine, Cyanuric acid
Natural rubbers, Latex
Nitrosamines, Nitrates, Nitrites
Octyl- and Nonylphenols and Octyl- or Nonylphenolethoxylates; TNPP
Organotin compounds
Parabens PBT and vPvB substances according to EC
Regulation No.1907/2006 (REACH)
Pentachlorophenol (PCP)
PFOA, PFOS
Plasticisers (e.g. Adipates, ESBO, Phthalates*)
Polychlorinated Bi-, Terphenyls and Naphthalenes
Polychlorinated dibenzodioxins and dibenzofurans
Polycyclic aromatic hydrocarbons (PAH)
Radioactive substances
Recycled materials
Selenium, Silver, Tellurium, Thorium
Styrene SVHC on "Candidate List of Substances of Very High Concern for Authorisation" *
Thiuram mix
Tin, Gold, Tantalum, Tungsten
UV-hardeners (e.g. ITX, Titanyl-acetylacetone)
Vinylchloride, Vinylidenechloride, PVC or PVDC

*) DEP, DEHP or DIBP may be used in the catalyst system, which may result in traces of these phthalates in the product, typically in concentrations below 1 ppm.

Prepared by: Borealis Group Product Stewardship 24.08.2016 Ed. 18.