



REACH STATEMENT FOR ALL PRODUCTS AND GRADES

June 23, 2015

Dear Customer,

As the global supply chain continues to expand, Ravago Manufacturing Americas is committed to reducing our environmental impacts and supporting our customers and suppliers to do the same. Evolving global environmental regulations and increasing customer demands have made understanding the composition of all materials and products a top priority for Ravago Manufacturing Americas.

Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) is a European Union Regulation of 18 December 2006. REACH addresses the production and use of chemical substances, and their potential impacts on both human health and the environment. REACH applies to all chemicals imported or produced in the EU.

The REACH regulation is written such that the company that imports chemicals into Europe is responsible for compliance. To comply, REACH requires registration of the monomers and other relevant substances used in the polymer, if they are part of the polymer for more than 0.1 % and produced/imported in a volume of 1 ton or more per year.

Ravago Manufacturing Americas does not directly import chemicals into Europe. As such, Ravago Manufacturing Americas cannot register chemicals under REACH.

REACH and its implications for polymers / polymer preparations

Please also note that the polymeric end products as distributed by Ravago Manufacturing Americas are in most cases "preparations". Under REACH, preparations do not need to be registered separately, only the substances (monomers, additives...) on their own are subject to registration obligations. As such, polymers are exempted from registration requirements under REACH.

Substances of Very High Concern

Another important aspect of REACH, known as Annex XIV, will list the Substances of Very High Concern (SVHC) that will be subjected to the authorization procedure. Once it is included in Annex XIV, a substance cannot be actively marketed or used after a date specified in the Annex (known as the "sunset date"), unless the company is granted an authorization for its use. A Candidate List with **163 substances** identified as SVHCs and therefore likely to be included in Annex XIV, was **published on the ECHA website the 15th day of June 2015**. <http://echa.europa.eu/web/guest/candidate-list-table>

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As your supplier, we are aware that this publication may have legal obligations for you and your downstream users / customers. Any supplier of an article in the EU/EAA will have to communicate the presence of any of the SVHCs in that article in an amount of more than 0.1% (w/w). Also, for materials not classified as dangerous, sufficient information should be available upon request when at least one substance on the Candidate list is present in an individual concentration of at least 0.1 % (w/w).

Based on the information available to us from our suppliers, we do not expect any of these substances to be intentionally present in an amount of more than 0.1% (w/w) in any of our products.

If you do not export these products or parts made from these products to Europe, there is no action required on your part.

We do hope you understand that from a point of workload and efficiency, we cannot answer your questionnaires individually.

Please pass this information on to the person in your organization responsible for REACH/SVHC, and if you should have any further questions or remarks, don't hesitate to contact us.

Yours sincerely,

Andrea Cronin
Compliance & Assurance Manager
Email: acronin@ravagoamericas.com
T: 407.875.6759 or C: 203.722.1450

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January 15, 2015

Re: Ravago Manufacturing Americas products sold under the following brands – Enviramid, Hylon, Hylex, Hybrid, Hylac, Hysun

To Whom It May Concern:

The above listed Ravago product lines (all grades and colors) do not contain as intentional ingredients: lead, mercury, cadmium, hexavalent chromium, or their compounds; polybrominated biphenyls, or polybrominated diphenylethers.

All Ravago products comply with the following directives:

EU-Directive 2011/65/EU-ROHS:

Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.

EU-Directive 2003/11/EC:

Restriction of Tetrabromodiphenylether, Pentabromodiphenylether, Hexabromodiphenylether, Heptabromodiphenylether, Octabromodiphenylether, Nonabromodiphenylether, and Decabromodiphenylether.

EU-Decision 2005/618/EC:

Establishing maximum concentration levels for certain hazardous substances.

EU-Directive 2011/65/EU-ROHS:

Restriction of the use of certain Hazardous Substances in electrical and electronic equipment.

As the supplier of the material, we cannot make any statement with regard to the final molded product manufactured from this material since this may be process dependent. If you should have any questions or concerns please contact me at 1-800-459-7009.

Best regards,

David Morris

David Morris

This information is not intended as warranty of any kind. Buyers must make their own representative tests and assume all risks of use, whether used alone or in combination with any other products. Ravago Manufacturing Americas assumes no obligation or liability for any advice furnished by it or results obtained with respect to products. All warranties, expressed or implied, including warranties of merchantability for a particular purpose or use are excluded and disclaimed. Ravago Manufacturing Americas assumes no liability for use of products in infringement of any patent. The foregoing limitation of remedy and exclusion of liability is reflected in and is part of the consideration for the price at which Ravago Manufacturing Americas sells the products.

Ravago Manufacturing Americas

405 Park Tower Drive
Manchester, TN 37355

Tel: 1-800-459-7009
Fax: 1-931-728-7005





March 13, 2006

Re: RoHS Restricted substances

To whom it may Concern,

This letter is to confirm that Echo RPPC20/2 black polypropylene compound does not intentionally contain any of the following hazardous substances that are restricted by Directive 2002/95/EC (RoHS): hexavalent chromium, ~~lead~~, cadmium, mercury, PBBs or PBDEs.

We do not specifically run any analysis on our raw materials or end products to measure for these restricted materials.

As a supplier of the material, we cannot make any statement with regard to the final molded components manufactured from this material since this may be process dependent.

If you have any questions or need further assistance, please do not hesitate to contact me.

Regards,

Jim Johnson
Director of Commercial Technology
Entec Engineered Resins
(931)-728-7009 phone
(931)-728-7005 fax
Jjohnson@entecresins.com

Client: Ravago Manufacturing Americas

Job No: 104261

Calibration Summary

Sample ID: Laboratory Control Standard (1.00 ppm Second Source Standard)

<u>Analyte</u>	<u>Result</u>	<u>% Rec</u>	<u>% Rec Limits</u>
Fluoride	1.01	101	90-110
Chloride	1.01	101	90-110
Bromide	1.00	100	90-110

Standard Curves (n=6) $r^2 \geq 0.999$

Date Analyzed: 04-16-08

Quality Control Summary

Sample ID: ECHO RPPC 2012 BK
Units: Percent w/w

<u>Analyte</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Average Result</u>	<u>RPD</u>
Fluoride	ND	ND	ND	N/A
Chloride	0.140	0.139	0.140	1
Bromide	0.0012	0.0013	0.0013	8

Sample ID: Blank Spike With Known Compounds

<u>Analyte</u>	<u>Compound</u>	<u>Target %</u>	<u>Result %</u>	<u>% of Target</u>
Fluoride	Na Trifluoroacetate	41.1	38.6	94
Chloride	2,6 Dichloroindophenol, Na	23.8	21.7	91
Bromide	Bromphenol Blue	47.7	46.1	97

QC Guidelines have not been determined for this method and matrix

Client: RAVAGO MANUFACTURING AMERICAS
 Job Number: 104261

Quality Control Summary

Sample: ECHO RPPC20/2 BK

Parts Per Million ($\mu\text{g/g}$)

Analyte	Sample Result	Duplicate Result	Average Result	Sample RPD	Spike Conc	Spike Result	Spike % Rec
Antimony	11.5	9.44	10.5	19.7	86	97.3	101
Arsenic	0.88	0.75	0.82		86	120	139
Beryllium	ND	ND	ND		86	93.2	108
Bismuth	0.27	0.21	0.24		86	92.3	107
Cadmium	0.53	0.56	0.55		86	85.1	98
Chromium	2.3	3.5	2.9		86	104	118
Cobalt	0.27	0.27	0.27		86	102	118
Lead	5.32	5.57	5.45	4.6	86	97.3	107
Manganese	4.87	4.62	4.75	5.3	86	103	114
Mercury	ND	ND	ND		8.6	8.23	96
Molybdenum	3.75	1.80	2.78		86	99.4	112
Nickel	3.60	4.41	4.01	20.2	86	112	126
Tin	120	121	121	0.8	86	218	113

Date Analyzed: 03-31-08
 High duplicate precision may be due to sample nonhomogeneity.

Client: RAVAGO MANUFACTURING AMERICAS
Job Number: 104261

Quality Control Summary

Sample: Laboratory Fortified Blank (LFB)

Parts Per Million ($\mu\text{g/g}$)

Analyte	Blank Result	Spike Conc	Spike Result	Spike % Rec
Antimony	ND	100	76	76
Arsenic	ND	100	95.4	95
Beryllium	ND	100	133	133
Bismuth	ND	100	103	103
Cadmium	ND	100	104	104
Chromium	ND	100	109	109
Cobalt	ND	100	107	107
Lead	ND	100	102	102
Manganese	0.14	100	102	102
Mercury	ND	10	9.89	99
Molybdenum	0.34	100	107	107
Nickel	ND	100	111	111
Tin	ND	100	99.3	99

Date Analyzed: 03-31-08

Client: Ravago Manufacturing Americas
Job No: 104261

Chlorine as Chloride, Bromine as Bromide and Fluorine as Fluoride
by Parr Bomb Combustion/SOP 4020, Rev 8
Ion Chromatography-Suppressed Conductivity

Column: Dionex AS9-SC/AG9-SC
Eluent: 2mM Na₂CO₃, 0.75 mM NaHCO₃
Flow: 2.00mL/min
Injection: 300µL
Detection: Suppressed Conductivity

A portion of the sample was oxidized in a Parr bomb. The combustion products were trapped in a sodium bicarbonate solution and brought to 100 mL with water. A method blank was prepared in the same manner. The sample, duplicate, blank matrix spike and a blank were analyzed for chloride, fluoride and bromide by Ion Chromatography. The method blank had detectable chloride and fluoride. The detection limits are based on the amount of sample oxidized adjusted for the blank.

Chlorine as Chloride

<u>Sample ID</u>	<u>Micrograms</u>	<u>Percent (w/w) Blank-Corrected</u>	<u>Sample Weight (mg)</u>	<u>Detection Limit Percent (w/w)</u>
ECHO RPPC 2012 BK	475	0.140	326.1	0.003
ECHO RPPC 2012 BK Duplicate	451	0.139	309.6	0.003
Method Blank	20	NA	NA	NA

Date Analyzed: 04-18-08

Fluorine as Fluoride

<u>Sample ID</u>	<u>Micrograms</u>	<u>Percent (w/w) Blank-Corrected</u>	<u>Sample Weight (mg)</u>	<u>Detection Limit Percent (w/w)</u>
ECHO RPPC 2012 BK	9	ND	326.1	0.002
ECHO RPPC 2012 BK Duplicate	ND	ND	309.6	0.002
Method Blank	4	NA	NA	NA

Bromine as Bromide

<u>Sample ID</u>	<u>Micrograms</u>	<u>Percent (w/w) Blank-Corrected</u>	<u>Sample Weight (mg)</u>	<u>Detection Limit Percent (w/w)</u>
ECHO RPPC 2012 BK	4	0.0012	326.1	0.0006
ECHO RPPC 2012 BK Duplicate	4	0.0013	309.6	0.0006
Method Blank	ND	NA	NA	NA

Client: RAVAGO MANUFACTURING AMERICAS
Job Number: 104261

Selected Metals by SOP 7040, Rev 9
Quantitative Analysis Report
Inductively Coupled Plasma - Mass Spectrometry

Parts Per Million ($\mu\text{g/g}$)

<u>Element</u>	<u>ECHO RPPC20/2 BK</u>	<u>Detection Limit</u>
Antimony	11.5	0.09
Arsenic	0.88	0.1
Beryllium	ND	0.09
Bismuth	0.27	0.09
Cadmium	0.53	0.09
Chromium	2.3	0.7
Cobalt	0.27	0.09
Lead	5.32	0.09
Manganese	4.9	0.2
Mercury	ND	0.09
Molybdenum	3.8	0.6
Nickel	3.60	0.09
Tin	120	0.5

Date Analyzed: 03-31-08