MEASUREMENT PROTOCOL
No. PM_CT3_OPT_2015_03_03_15

Order number: ZAK_Aremco_2014_01-3
Customer: Aremco Products Inc.

Sample ID:

- customer: 840-M
- NTC: 840_M_01

Measured quantity: spectral normal emissivity
Measurement method: SNEHT
Temperature (T): 300°C
Polar angle (θ): 0°

Date: 23.2.2015
Measured by: Ing. Petra Honnerová, Ph.D.
Responsible person: Ing. Jiri Martan, Ph.D.  tel.: +420 377 634 718
e-mail: jmartan@ntc.zcu.cz

<table>
<thead>
<tr>
<th>λ (μm)</th>
<th>2.5</th>
<th>3.5</th>
<th>4.7</th>
<th>8.3</th>
<th>10</th>
<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε (λ, θ, T) (-)</td>
<td>0.921</td>
<td>0.932</td>
<td>0.925</td>
<td>0.982</td>
<td>0.891</td>
<td>0.961</td>
<td>0.905</td>
<td>0.802</td>
<td>0.862</td>
</tr>
<tr>
<td>Δε (-), k = 2</td>
<td>0.021</td>
<td>0.017</td>
<td>0.017</td>
<td>0.018</td>
<td>0.018</td>
<td>0.024</td>
<td>0.031</td>
<td>0.041</td>
<td></td>
</tr>
</tbody>
</table>
Order number: ZAK_Aremco_2014_01-3
Customer: Aremco Products Inc.
Sample ID: customer 840-M, NTC 840_M_01
Measured quantity: spectral normal emissivity
Measurement method: SNEHT
Temperature (T): 400°C
Polar angle (θ): 0°
Date: 23.2.2015
Measured by: Ing. Petra Honnerová, Ph.D.
Responsible person: Ing. Jiri Martan, Ph.D.

e (l,q,T) ± Δε (l,q,T) (-)

<table>
<thead>
<tr>
<th>λ (μm)</th>
<th>2</th>
<th>3.5</th>
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<th>10</th>
<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε (l,q,T) (-)</td>
<td>0.902</td>
<td>0.942</td>
<td>0.933</td>
<td>0.987</td>
<td>0.900</td>
<td>0.967</td>
<td>0.922</td>
<td>0.835</td>
<td>0.814</td>
</tr>
<tr>
<td>Δε (-), k = 2</td>
<td>0.037</td>
<td>0.016</td>
<td>0.016</td>
<td>0.017</td>
<td>0.016</td>
<td>0.016</td>
<td>0.023</td>
<td>0.031</td>
<td>0.049</td>
</tr>
</tbody>
</table>
MEASUREMENT PROTOCOL
No. PM_CT3_OPT_2015_03_03_17

Order number  ZAK_Aremco_2014_01-3
Customer  Aremco Products Inc.
Sample ID  customer  840-M
  NTC  840_M_01
Measured quantity  spectral normal emissivity
Measurement method  SNEHT
Temperature (T)  500°C
Polar angle (θ)  0°
Date  23.2.2015
Measured by  Ing. Petra Honnerová, Ph.D.
Responsible person  Ing. Jiri Martan, Ph.D.  tel.: +420 377 634 718
e-mail: jmartan@ntc.zcu.cz

<table>
<thead>
<tr>
<th>λ (μm)</th>
<th>2</th>
<th>3.5</th>
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<th>10</th>
<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε(λ,θ,T) (-)</td>
<td>0.932</td>
<td>0.917</td>
<td>0.893</td>
<td>0.988</td>
<td>0.910</td>
<td>0.959</td>
<td>0.928</td>
<td>0.879</td>
<td>0.865</td>
</tr>
<tr>
<td>Δε (-), k = 2</td>
<td>0.024</td>
<td>0.022</td>
<td>0.022</td>
<td>0.023</td>
<td>0.022</td>
<td>0.022</td>
<td>0.027</td>
<td>0.035</td>
<td>0.041</td>
</tr>
</tbody>
</table>
MEASUREMENT PROTOCOL

No. PM_CT3_OPT_2015_03_03_18

<table>
<thead>
<tr>
<th>Order number</th>
<th>ZAK_Aremco_2014_01-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Aremco Products Inc.</td>
</tr>
<tr>
<td>Sample ID</td>
<td>customer 840-M</td>
</tr>
<tr>
<td></td>
<td>NTC 840_M_01</td>
</tr>
<tr>
<td>Measured quantity</td>
<td>spectral normal emissivity</td>
</tr>
<tr>
<td>Measurement method</td>
<td>SNEHT</td>
</tr>
<tr>
<td>Temperature (T)</td>
<td>600°C</td>
</tr>
<tr>
<td>Polar angle (θ)</td>
<td>0°</td>
</tr>
<tr>
<td>Date</td>
<td>23.2.2015</td>
</tr>
<tr>
<td>Measured by</td>
<td>Ing. Petra Honnerová, Ph.D.</td>
</tr>
<tr>
<td>Responsible person</td>
<td>Ing. Jiri Martan, Ph.D.</td>
</tr>
</tbody>
</table>

![Graph showing the spectral normal emissivity (ε) and relative uncertainty (Δε) for different wavelengths (λ)].

<table>
<thead>
<tr>
<th>λ (µm)</th>
<th>2</th>
<th>3.5</th>
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<th>8.3</th>
<th>10</th>
<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε (λ, θ, T)</td>
<td>0.885</td>
<td>0.881</td>
<td>0.881</td>
<td>0.972</td>
<td>0.895</td>
<td>0.944</td>
<td>0.915</td>
<td>0.884</td>
<td>0.855</td>
</tr>
<tr>
<td>Δε (λ, θ, T), k = 2</td>
<td>0.035</td>
<td>0.035</td>
<td>0.034</td>
<td>0.036</td>
<td>0.034</td>
<td>0.035</td>
<td>0.039</td>
<td>0.044</td>
<td>0.051</td>
</tr>
</tbody>
</table>

Ing. Jiri Martan, Ph.D.  
tel.: +420 377 634 718  
e-mail: jmartan@ntc.zcu.cz
MEASUREMENT PROTOCOL

No. PM_CT3_OPT_2015_03_03_19

Order number ZAK_Aremco_2014_01-3
Customer Aremco Products Inc.
Sample ID
  customer 840-M
  NTC 840_M_01
Measured quantity spectral normal emissivity
Measurement method SNEHT
Temperature (T) 700°C
Polar angle (θ) 0°
Date 23.2.2015
Measured by Ing. Petra Honnerová, Ph.D.
Responsible person Ing. Jiri Martan, Ph.D.  tel.: +420 377 634 718
e-mail: jmartan@ntc.zcu.cz

<table>
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<tr>
<th>λ (µm)</th>
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<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε (λ, θ, T) (-)</td>
<td>0.914</td>
<td>0.899</td>
<td>0.893</td>
<td>0.974</td>
<td>0.884</td>
<td>0.930</td>
<td>0.900</td>
<td>0.874</td>
<td>0.820</td>
</tr>
<tr>
<td>Δε (-), k = 2</td>
<td>0.035</td>
<td>0.034</td>
<td>0.034</td>
<td>0.036</td>
<td>0.034</td>
<td>0.035</td>
<td>0.038</td>
<td>0.043</td>
<td>0.051</td>
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</tbody>
</table>
MEASUREMENT PROTOCOL
No. PM_CT3_OPT_2015_03_03_20

Order number
ZAK_Aremco_2014_01-3

Customer
Aremco Products Inc.

Sample ID
customer: 840-M
NTC: 840_M_01

Measured quantity
spectral normal emissivity

Measurement method
SNEHT

Temperature (T)
800°C

Polar angle (θ)
0°

Date
23.2.2015

Measured by
Ing. Petra Honnerová, Ph.D.

Responsible person
Ing. Jiri Martan, Ph.D.

tel.: +420 377 634 718
e-mail: jmartan@ntc.zcu.cz

<table>
<thead>
<tr>
<th>λ (µm)</th>
<th>2</th>
<th>3.5</th>
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<th>10</th>
<th>12.5</th>
<th>17.5</th>
<th>20</th>
<th>25</th>
</tr>
</thead>
<tbody>
<tr>
<td>ε(λ,θ,T) (-)</td>
<td>0.924</td>
<td>0.915</td>
<td>0.911</td>
<td>0.986</td>
<td>0.906</td>
<td>0.943</td>
<td>0.934</td>
<td>0.913</td>
<td>0.832</td>
</tr>
<tr>
<td>Δε (-), k = 2</td>
<td>0.038</td>
<td>0.037</td>
<td>0.037</td>
<td>0.039</td>
<td>0.037</td>
<td>0.037</td>
<td>0.041</td>
<td>0.047</td>
<td>0.062</td>
</tr>
</tbody>
</table>