



Performance Polyamides GBU

February 15, 2018

RE: Force Majeure

Dear Valued Customer,

We have been informed by our supplier of adiponitrile ("ADN") that it will be unable to fulfill its contractual obligations to us for deliveries of ADN for an as yet undefined period of time.

As a result, our ability to serve our customers of ADN, hexamethylene diamine, nylon salt, polymer, fibers, compounds, and their derivative products, has been, and will be, negatively impacted. Therefore, effective immediately, we are notifying our customers of this force majeure event.

We will contact you rapidly to inform you of the expected impact of this very severe event on our deliveries of products to you, and of the allocation details, as soon as they become available.

We apologize for any inconvenience that this situation may cause to you. Please be assured that we are striving to minimize the impact of this situation on our deliveries of products to you.

Very truly yours,

A handwritten signature in black ink, appearing to be 'VK', is written over a light gray rectangular background.

Vincent Kamel
President of Performance Polyamides GBU

RHODIA OPERATIONS S.A.S. – a member of the SOLVAY Group
Headquarters : 25 rue de Clichy, 75009 Paris, France
RCS Paris n° 622 037 083



Brussels, January 31st 2018

Dear Customer,

Due to unforeseeable technical problems in the production plants in Feluy and Gonfreville, Total Petrochemicals & Refining SA and Total Petrochemicals France SA are experiencing a shortage in polypropylene polymers production, and consequently will not be able to perform their contractual commitments. Unfortunately, even notwithstanding our exercising of all care, the consequences of these technical issues could not have been avoided.

In view of this situation, we hereby declare force majeure as from January 31st 2018.

We will of course keep you informed about the development, the duration of the consequences of this Force Majeure event.

We'll make reasonable efforts to mitigate the consequences of this Force Majeure event but we expect our availability of products not to be sufficient to meet all of our contractual commitments till the end of the regulatory maintenance shutdown in Feluy, scheduled mid-April.

We will contact you in order to find in common agreement the best way to mitigate the impact of this Force majeure event.

Nevertheless, we suggest that you take necessary actions to prevent or limit any damage or disruption, especially in the coming weeks.

All our sales organization remains at your disposal for any request.

Yours sincerely,



DE GREEF SONIA

Total Petrochemicals & Refining SA

Total Petrochemicals France SA

Nylon

Email flash

16 February 2018: Issue 159

Overview

Solvay declares Force Majeure across total PA66 Chain

Detailed analysis provided:

Yesterday Solvay declared Force Majeure in Adiponitrile (ADN), Hexamethylene Diamine (HMD), Nylon Salt, PA66 Polymer, PA66-based Fibres, PA66-Compounds and all other PA66-related products. The company announced that it was taking this step as a result of its ADN supplier being unable to fulfill its contractual obligations for an undefined period.

Solvay's ADN supplier is Butachimie, a 50:50 JV between Solvay and Invista, and unconfirmed reports suggest that the underlying issue is a workforce strike at Butachimie. According to these reports, the strike began on Wednesday 14 February 2018, and affects both the Adiponitrile plant (ADN) and the Hexamethylene Diamine plant (HMD). Our understanding is that both of these plants have been idled as a result of the labour action.

This strike comes at a particularly unfortunate time, as it follows a number of unrelated events which have already reduced output and resulted in Force Majeure declarations across many of the world's key ADN, HMD and PA66 polymer assets:

Company	Product	Date of Force Majeure Declaration
Invista	PA66 Polymer	August 2017
Ascend	HMD	January 2018
Solvay	PA66 Polymer	January 2018
BASF	HMD	January 2018

The Butachimie complex comprises the world's largest ADN plant (520ktpa, 33% of total world capacity) and a world-scale HMD plant (180ktpa, 9% of total world capacity), so any upset there potentially has very serious implications for many PA66 supply chains. This is particularly true for Europe, as Butachimie is the only ADN production unit in the region. The other unfortunate complication of this development is that Solvay is currently in the process of selling its share of the JV to BASF.

Given its importance, we will continue to report on this as the situation develops.

Nylon

Email flash

22 February 2018: Issue 160

Overview

Invista declares Force Majeure on Adiponitrile and Hexamethylene Diamine in Europe

Detailed analysis provided:

It has now been confirmed that Invista has also declared Force Majeure in Adiponitrile (ADN) and Hexamethylene Diamine (HMD) in Europe. According to our information, Invista informed its contract customers of this on 16 February 2018, a day after a similar announcement by Solvay (see E-flash #159, 16 February 2018). Like Solvay, Invista said that it had been forced to take this step because of the failure of one of its ADN / HMD suppliers. This announcement was to be expected, given that Invista and Solvay share the same supplier, i.e. Butachimie in France. (What both parties failed to mention in their respective announcements was that Butachimie is a 50:50 JV between Invista and Solvay).

At this point there are no details of any of the associated sales allocation plans or to what extent contract customers will be cutback.

The good news is that unconfirmed and unrelated sources today suggested that both the ADN and the HMD units at Butachimie are now in the process of being restarted, and it is hoped that full rates will be re-established next week. In spite of this most recent production interruption perhaps being mercifully short, we expect that it will still have a direct and adverse effect on supplies of ADN, HMD and PA66 polymer in Europe in the short term, owing to the already low inventory levels throughout the chain.

Please do not hesitate to contact us should you require any assistance.