BASF SE
Germany, Integrated Chemicals

A STABLE

Corporate profile

BASF SE, based in Ludwigshafen, Germany, is a major producer of various commodity chemicals, agriculture solutions, additives, and intermediate products consumed in various industries. The company also operates in oil and natural gas exploration and production via its equity-consolidated Wintershall DEA joint venture. After implementing a new structure as of 1 January 2019, BASF now has 12 divisions, grouped into six segments: Chemicals (Petrochemicals and Intermediates), Materials (Performance Materials and Monomers), Industrial Solutions (Dispersions, Pigments and Performance Chemicals), Surface Technologies (Catalysts, Coatings and Construction Chemicals), Nutrition and Care (Care Chemicals, Nutrition & Health) and Agricultural Solutions.

Key metrics

		Scope estimates		
Scope credit ratios	2018	2019F	2020F	2021F
EBITDA/interest cover (x)	16.7x	13.3x	15.1x	17.6x
Scope-adjusted debt (SaD)/EBITDA	2.3x	2.7x	2.3x	1.8x
Scope-adjusted FFO/SaD	34%	32%	37%	46%
FOCF/SaD	18%	16%	21%	27%

Rating rationale

Scope Ratings has today affirmed the A corporate issuer ratings on German-based BASF SE and its financing subsidiary BASF Finance Europe N.V. The S-1 short-term rating and A senior unsecured debt rating were also affirmed. The Outlook is Stable.

The credit rating assessment of ‘A’ still mirrors BASF’s position as the largest player in the global chemicals industry (2018 sales: EUR 62.7bn). Moreover, the company is ranked among the top three in the market for about 75% of its businesses and has a favourable cost position driven by its ‘Verbund` concept and sizeable production capabilities. In the context of BASF’s large exposure to specialty chemicals, its considerable intellectual property portfolio and R&D activity are credit-positive. Among others, the company’s diversification is supported by a strong global footprint, serving up to 90,000 customers across more than 90 countries. In this regard, we highlight BASF’s strongly diversified product portfolio along the chemical value chain, which includes a considerable amount of speciality chemicals, which are less cyclical than base chemicals and have low substitution risk. By bundling its Oil & Gas business in a joint venture with LetterOne DEA (closed on 1 May 2019; BASF holds 67% and LetterOne 33% of Wintershall DEA’s ordinary shares), BASF has reduced volatility risks for profitability (EBITDA margin), as the segment is subject to earnings and cash flow volatility due to price changes in oil and natural gas. Additionally, BASF’s substantial specialty chemicals activities have enhanced the resilience of profitability, as most of these divisions depend less on raw materials, can exert more pricing power and benefit from product innovations.

BASF’s financial risk profile still reflects management’s stated financial policy and credible track record of maintaining moderate leverage. This is despite BASF’s credit metrics having deteriorated in 2018, due to 1) the Wintershall deconsolidation and its resulting accounting treatment as discontinued operations from 1 January 2018; 2) weaker demand from the automotive industry, combined with significantly lower isocyanate (e.g. TDI/MDI) prices; and 3) the limited negative cost impacts from the low water levels in the Rhine.

Ratings & Outlook

Corporate ratings	A/Stable
Short-term rating	S-1
Senior unsecured rating	A

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Related Methodology

Rating Methodology Chemical Corporates

Corporate Rating Methodology

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As the global economy is still losing steam, we anticipate key credit ratios to further deteriorate in 2019, but remain in line with our ratio guideline for a financial risk profile rated 'A'. According to our rating case, we project leverage, as measured by Scope-adjusted debt (SaD)/EBITDA, to deteriorate to 2.7x in 2019, from 2.3x in 2018. While conditions in the global chemicals industry are likely to remain challenging beyond 2019, we assume stronger credit metrics beyond 2019, due to 1) the first positive effects on profitability from the 'excellence program 2019–2021'; 2) increasing financial results of the equity-consolidated Wintershall DEA joint venture; and 3) no significant shut-downs of major production facilities for maintenance, among others.

Outlook

The Outlook is Stable and mirrors BASF's solid financial risk profile assessment, supported by better-than-adequate liquidity, in accordance with our rating methodology, and a commitment to a solid 'A' rating. In light of this, we expect, for the medium term, debt protection measures of SaD/EBITDA at about 2.0x and funds from operations (FFO)/SaD at 40%. A positive rating action would be warranted if BASF were to significantly increase its share in the speciality chemicals business and thus considerably improve its business risk profile. We consider this scenario unlikely in the medium term given the company's stated acquisition policy and financial targets.

A rating upgrade may also be considered if BASF were to improve its debt protection measures (SaD/EBITDA, FFO/SaD) sustainably to about 1.5x and 50%, respectively. A negative rating action could result if the financial risk profile were to weaken, i.e. with a SaD/EBITDA of sustainably more than 2.5x and an FFO/SaD of 30%.

Rating drivers

Positive rating drivers	Negative rating drivers
• Strong market position, holding between first and third position for about 75% of its businesses	• Heavy dependence on general economic environment and on economic developments in emerging markets in particular
• Large share of specialty chemicals that are less subject to cyclicality risks and changing feedstock prices	• Risks of sudden negative changes in feedstock prices and exposure to changes in global commodities and food prices
• Broad and globally diversified business; one of the largest integrated chemical companies globally; diversification benefits from presence in agrochemicals, bulk and specialty chemicals	• Still some overrepresentation of business in Europe, a region that is projected to show lower growth rates for chemicals
• History of solid, resilient free cash flow generation, great financial flexibility and proven management commitment to a solid 'A' rating	• Exposure to very cyclical end markets, such as transportation (automotive) and construction, in the Surface Technologies segment
• Benefits from large integrated sites worldwide providing higher product yields ('Verbund' concept)	• Chemicals segment (mainly base chemicals) contributes about 24% (2018) to EBITDA and is highly cyclical, great sensitivity to oil price development and limited pricing power
• Substantial coverage of future pension payments with accumulated pension plan assets covering payments for far more than a decade	
• Profitability (EBITDA margin) is less sensitive to volatile oil and natural gas prices after the formation of the Wintershall DEA joint venture	
• Continuous strong spending on R&D, compared to integrated chemicals sector peers. This translates into high innovation power	

Rating-change drivers

Positive rating-change drivers	Negative rating-change drivers
• Sustainable improvement of debt protection measures to levels of about 1.5x (SaD/EBITDA) and 50% (FFO/SaD)	• Sizeable debt-funded acquisitions leading to a material deterioration in debt protection measures
• Substantial increase in share of specialty chemicals	• Risks of global oversupply of commodity chemicals, leading to price pressure and margin squeeze in Chemicals segment
	• Deterioration in credit protection measures such as SaD/EBITDA to more than 2.5x and FFO/SaD of more than 30% on a sustained basis

Financial overview

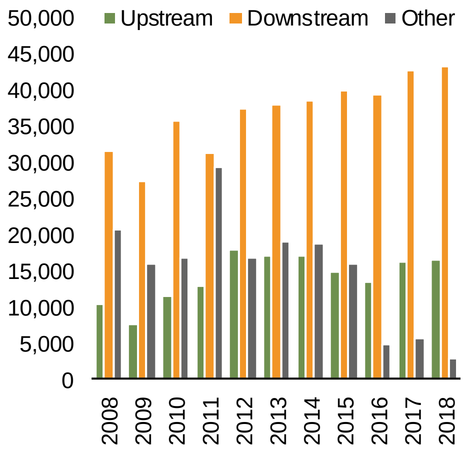
		Scope estimates		
Scope credit ratios	**2018**	**2019F**	**2020F**	**2021F**
EBITDA/interest cover (x)	16.7x	13.3x	15.1x	17.6x
SaD/EBITDA	2.3x	2.7x	2.3x	1.8x
Scope-adjusted FFO/SaD	34%	32%	37%	46%
FOCF/SaD	18%	16%	21%	27%
Scope-adjusted EBITDA in EUR m	**2018**	**2019F**	**2020F**	**2021F**
EBITDA	9,514	8,225	9,365	10,920
Operating lease payments in respective year	403	420	420	420
less: disposal gains on fixed assets included in EBITDA	-88	-100	-100	-100
Scope-adjusted EBITDA	9,829	8,545	9,685	11,240
Scope-adjusted FFO in EUR m	**2018**	**2019F**	**2020F**	**2021F**
EBITDA	9,514	8,225	9,365	10,920
less: (net) cash interest as per cash flow statement	-393	-512	-512	-512
less: cash tax paid as per cash flow statement	-1,981	-909	-1,262	-1,608
less: pension interest	-180	-133	-133	-133
add: depreciation component operating leases	342	358	358	358
less: dividends received from equity-accounted entities	427	450	623	706
less: disposal gains on fixed assets included in EBITDA	-88	-100	-100	-100
less: capitalised interest	-30	-30	-30	-30
Change in provisions	-67	0	0	0
Scope-adjusted FFO	7,544	7,349	8,309	9,601
Scope-adjusted debt in EUR m	**2018**	**2019F**	**2020F**	**2021F**
Reported gross financial debt	20,841	20,841	20,841	20,841
less: cash and cash equivalents	2,644	2,401	3,145	4,792
add: cash not accessible	400	400	400	400
add: pension adjustment	2,611	2,461	2,461	2,461
add: operating lease obligations	1,241	1,241	1,241	1,241
add: asset retirement obligations	65[1]	579	579	579
Scope-adjusted debt	22,514	23,121	22,377	20,731

[1] Figures for 2019F to 2021F also include provisions for environmental protection.

Business risk profile

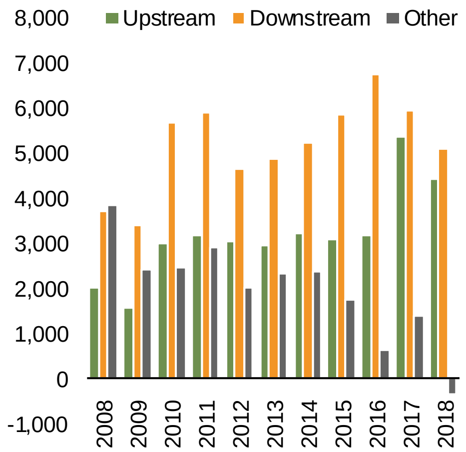
We consider companies acting as integrated players in the chemicals industry to face high revenue and earnings cyclicality. In particular, base chemicals and petrochemicals are highly sensitive to economic developments. However, portfolio cyclicality is partly balanced by less cyclical specialty chemicals. In addition, producers acting as integrated chemical companies are protected by high entry barriers and medium substitution risk. Base chemicals are also the backbone of many aftermarkets.

Figure 1: Revenue by division (in EUR m)



Source: Scope, BASF
Note: 'Other' includes other and Oil & Gas

Figure 2: EBITDA by division (in EUR m)



Source: Scope, BASF
Note: 'Other' includes other and Oil & Gas

BASF's competitive position and business risk profile is driven by its strong position in the global chemicals industry. As BASF is ranked first globally (sales 2018: EUR 62.7bn), we consider its market position to be very strong. Our assessment is supported by the market positions held by the company's business units. BASF reports that it ranks among the top three in the market for about 75% of its businesses. On 18 January 2019, the European Commission granted conditional clearance for BASF to purchase Solvay's integrated polyamide arm (sales of ~EUR 1.32bn), which will support the company's position in engineered plastics. This transaction is expected to be finalised in H2 2019 after all remaining closing conditions have been fulfilled. BASF has a wide-ranging portfolio, including the production of petrochemicals and commodity chemicals, as well as many types of specialty products, including care chemicals, aroma ingredients, crop protection products, and coatings, among others. In our view, BASF is one of the companies with the highest integration along the chemical value chain.

In our opinion, BASF's size together with its 'Verbund' concept allows it to generate substantial economies of scale and a favourable cost position. The company's global six 'Verbund' sites and 355 additional production sites also add value through the efficient use of resources. On a global scale, BASF realises annual savings of more than EUR 1.0bn (energy savings >EUR 300m; logistics savings >EUR 600m; infrastructure savings >EUR 100m), leading to competitive cost advantages and higher product yields. For instance, the by-products of one plant can be used as raw material elsewhere, and production plants are connected through a network of pipes. Expenditures for logistics, storage, and shared on-site facilities such as fire department, security and waste treatment are likewise lower.

Figure 3: Selected market positions

- Isocyanates (TDI/MDI): No. 1 globally
- Polyamide film: No. 1 globally
- Glues and impregnating resins: No. 1 in glues in Europe
- Inorganic chemicals: No. 1 in inorganic salts in Europe and South America

- Automotive OEM coatings: No. 2 globally
- Automotive refinish coatings: No. 3 globally
- Surface treatment: No. 2 globally
- Decorative paints: No. 1 in Brazil

- Mobile emissions catalysts: No. 2 globally
- Chemical catalysts: No. 1 globally
- FCC refinery catalysts: No. 2 globally

- Admixture systems: No. 1 globally
- Construction systems: No. 4 globally

- Agricultural Solutions: No. 4 globally

Source: Scope, BASF

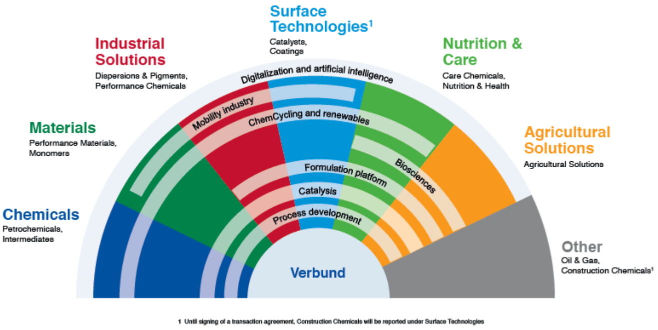
In the context of BASF's large exposure to specialty chemicals, we hold a positive view of its considerable intellectual property portfolio and R&D activity (measured by R&D expenditures/sales). In addition to substantial activities in specialty chemicals, BASF's approach towards production innovation is exceptional. Consequently, the company is ranked first for its intellectual property portfolio in the global chemicals landscape, together with a continuous flow of patent applications (~900 in 2018), considerable R&D expenditures compared to key competitors, as well as numerous research collaborations with about 300 universities, research institutes, companies, in addition to around 3,000 research projects with customers. These figures include Bayer's former seed and crop science business, acquired in 2018, including more than 250 patent families.

We still deem BASF's diversification to be strong, given the following reasons:

- After the change to BASF's new structure (as of 1 January 2019) and the planned disposal of the construction chemicals business (sales: ~EUR 2.5bn), and pigments activities (2018 sales: ~EUR 1.0bn), as well as the Wintershall DEA transaction, the company still shows very supportive diversity and scale. Furthermore, the divisional structure consists of 12 operating divisions with 86 strategic business units.
- BASF's products are consumed by up to 90,000 customers worldwide from different sectors. While integrated chemical companies' end-markets typically show considerable exposure to the chemicals industry (commodity chemicals are used in bulk quantities for other chemical products and plastics), more than 20% of sales are generated in the chemicals industry. Against this backdrop, we deem the breakdown of sales by industry as positive for the credit rating assessment and primarily driven by the strong exposure of specialty chemicals (2018: >20% chemicals and plastics; 10%-20% consumer goods, transportation; 5%-10% agriculture, construction, energy and resources; <5% health and nutrition, electronics).

Diversification is, however, constrained by BASF's geographical roots as a German company and overrepresentation in Europe, a region projected to grow more slowly in terms of demand for chemical products. Europe accounts for up to 45% of revenue. This number is expected to decrease in the future because of the company's Chinese operations, with the planned 'Verbund' site in Zhanjiang and the 'Verbund' site in Nanjing strengthened by brownfield investments. BASF is also looking to further expand in Asia. In the light of the expected size of the new production facility in Zhanjiang (capex: ~USD 10bn; area: ~9 km^2; the first production facilities are expected to go online in 2022, followed by the upstream plants between 2024 and 2026) compared to those in Ludwigshafen (~10 km^2), Antwerp (~6 km^2) and existing production facilities in China (~7 km^2), BASF is likely to be more focused on Asia.

Figure 4: Business segments



Source: BASF

Figure 5: Regional footprint (2018)

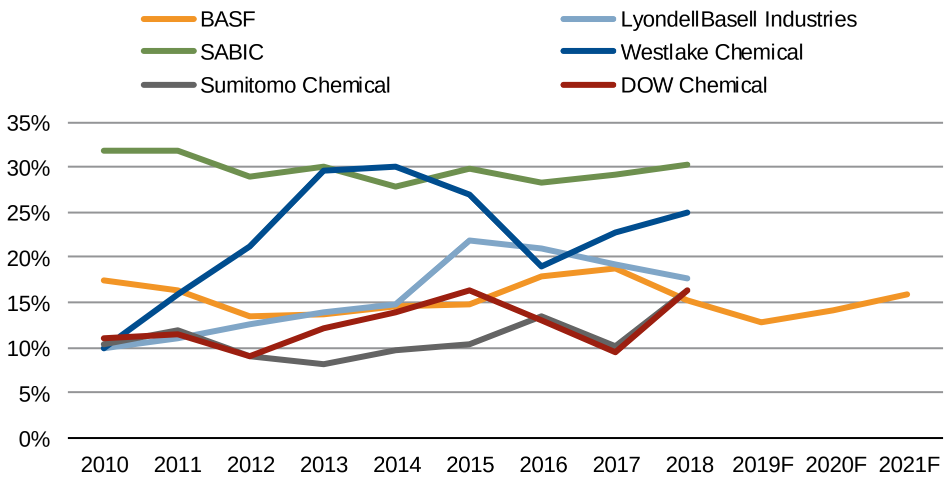
Source: BASF

As a part of the portfolio clean-up, BASF intends to sell its construction and pigment activities. In the light of their sizes compared to the rest of the group, we think BASF's diversification is not negatively affected.

Based on our methodology on chemical corporates, we focus on the assessment of BASF's through-the-cycle EBITDA margin for profitability and efficiency. BASF's integrated approach, strong demand and rising market prices for base chemical products have pushed the company's profitability significantly higher over the past couple of years. This development has been supported by a recovery in the earnings of BASF's former Oil & Gas arm (Wintershall was reported as discontinued operations until the closing of merger with LetterOne DEA on May 1, 2019, followed by at-equity consolidation from May 1, 2019 onwards; BASF holds 67% and LetterOne 33% of Wintershall DEA's ordinary shares) as a result of higher oil prices, which was be treated as discontinued operations from the first half of 2019. Despite this, we anticipate BASF's profitability to weaken in the coming years, following tougher economic conditions and the one-off cost of around EUR 800m (over the next three years) for its 'excellence program 2019–2021'. In our opinion, BASF's profitability would be positively influenced by the following:

- Significantly lower sensitivity to volatile oil and natural prices, as BASF has bundled its Oil & Gas segment in a joint venture with LetterOne.
- BASF's stable and resilient profitability, supported by its substantial specialty chemicals arm. In contrast to the commodity chemicals arm, most of BASF's specialty materials divisions depend less on raw materials, can exert stronger pricing power and benefit from product innovations.
- While profitability has been broadly in line with peers in the current path of the economic cycle, its lower volatility and continuous increase from 2012 to 2017 is positive. In contrast to BASF, integrated players with higher EBITDA margins benefit from favourable feedstock supply (USA) and/or backward integration into refining and/or oil and gas exploration. However, this advantage was somewhat offset by falling base chemical prices (e.g. ethylene) in 2018/2019, as a consequence of oversupply.

Figure 6: Profitability (EBITDA margin) versus selected peers



Source: Scope, Bloomberg

Financial risk profile

Our key assumptions are:

- Net present value of operating lease obligations added to Scope-adjusted debt
- 80% of provisions for environmental protection costs (contingent liabilities) included in Scope-adjusted debt and 5% of contingent liabilities included in Scope-adjusted interest expense to reflect the interest proportion of these liabilities
- Half of the company's unfunded pension provisions, given the high coverage of annual pension payments through dedicated pension assets
- Interest adjusted for the (estimated) interest component of pension provisions, operating leases and asset retirement obligations

Following the accounting treatment of Wintershall (see: **BASF: Updated rating case after signing of Wintershall transaction**) as discontinued operations and the lowering of the profit guidance in December 2018 (see: **BASF Group lowers its guidance for the fiscal year 2018**), BASF's credit metrics deteriorated in 2018. As the global economy was losing steam, perspectives for the global chemicals industry have become darker in the first half of 2019. The prices for several commodity chemicals, including styrene monomers, ethylene glycols, various other cracker products (Chemicals segment) as well as isocyanates (Materials segment) declined considerably in 2018 and 2019. Moreover, BASF is suffering from lower demand for automotive OEM (Surface Technologies segment), lower prices for vitamins (Nutrition & Health segment), and the scheduled turnaround for several steam crackers in Antwerp and Port Arthur in Q2 2019. According to BASF, one stream cracker in Ludwigshafen is scheduled for maintenance in the second half of the current year.

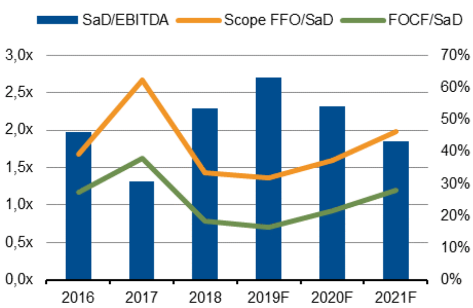
As a consequence of these headwinds, BASF issued a profit warning on 8 July 2019 (see: **BASF Group lowers its guidance for the second quarter and the fiscal year 2019**). Consequently, we anticipate key credit ratios to deteriorate in 2019 but remain in line with our ratio guideline for a financial risk profile rated 'A'. According to our rating case, we project leverage (SaD/EBITDA) to deteriorate to 2.7x in 2019, from 2.3x in 2018. The cash flow cover (FOCF/SaD) is likely to remain in the lower rating category. In the current year, FOCF/SaD is anticipated to slightly shrink to 16%, from 18% in 2018. This could be explained by BASF's capex projects (currently being planned or underway). Among others, the company is currently expanding its 'Verbund' site in Nanjing, increasing its production capacity for battery materials and those driven by the 'excellence program 2019-2021'. Additionally, we have pencilled in the first related cash outlays for BASF's new 'Verbund' site in Zhanjiang in 2021. Although conditions in the global chemicals industry are likely to remain challenging beyond 2019, we assume stronger credit metrics beyond 2019, supported by:

- The first positive effects on profitability from the 'excellence program 2019–2021' from 2019 onwards, despite the one-off costs of up to EUR 800m;
- The increasing financial results of the equity-consolidated Wintershall DEA joint venture;
- BASF's Agricultural Solutions segment is anticipated to face less headwinds from unfavourable weather conditions and distributor destocking in the U.S. and Canada than in the first half of 2019;
- No significant shut-downs of major production facilities for maintenance.

BASF's credit metrics could also be bolstered by potential proceeds from the planned sale of the construction chemicals and pigments business. As the company's initiatives are still at an early stage, our rating case excludes any potential proceeds from leaving these industries. Furthermore, our rating scenario excludes any proceeds of an IPO of the Wintershall DEA joint venture. As we believe acquisitions will play an important part in BASF's portfolio re-balancing, our model includes EUR 500m of bolt-on acquisitions in each of the years 2019, 2020 and 2021. By nature, any such larger-sized but conceivable bolt-ons are difficult to predict but we believe that any such transactions could weaken credit ratios once these transactions materialise.

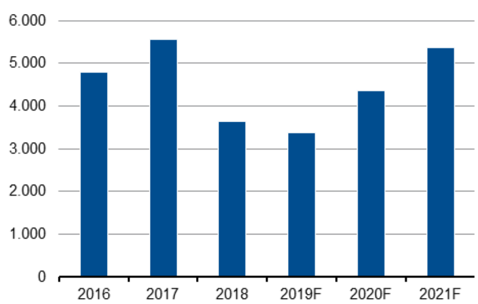
On the positive side, BASF's financial risk profile is strongly supported by its free cash flows, which are still at considerable levels despite the portfolio clean-up.

Figure 4: Credit metrics



Source: Scope

Figure 5: Free cash flow (EUR m)



Source: Scope

Despite our expectation of much weaker credit metrics, BASF will disclose strong liquidity. BASF still has good banking relationships, as evidenced, for instance, by the broad syndication of its committed credit lines (~ EUR 6bn) as well as a solid standing in public equity and debt markets. Furthermore, BASF faces minor maturity transformation risk thanks to its long-term structured maturity profile.

Supplementary rating drivers

In our view, the company is still committed to a conservative financial policy, which is expressed by, inter alia:

- Commitment to a solid credit rating of 'A';
- The company's selective M&A approach, avoiding heavy use of debt, with our view supported by public announcements by the company's management;
- The company's new target to increase dividends every year, as BASF can generate substantial free cash flow and is well able to cover dividend payments.

Short-term rating

With regard to BASF's issuer rating of A, we have left the S-1 short-term rating unchanged. The rating reflects our perception that the company's cash flow generation is both solid and sustainable. Short-term debt is safely covered by internal and external sources of liquidity.

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