

12 April 2024 – Neuss, Germany

Rating Action / Update:

Creditreform Rating has affirmed the unsolicited corporate issuer rating of Heidelberg Materials AG at **BBB / stable**

Creditreform Rating (CRA) has affirmed the unsolicited, public corporate issuer ratings of Heidelberg Materials AG – hereafter referred as Heidelberg Materials or the Company – and Heidelberg Materials Finance Luxembourg S.A., as well as the unsolicited corporate issue ratings of long-term local currency senior unsecured notes issued by Heidelberg Materials AG and Heidelberg Materials Finance Luxembourg S.A., at **BBB / stable**. The initial unsolicited short-term rating has been set at **L3** (adequate level of liquidity). In addition to this report, we also refer to the rating report of 22 May 2023, which contains further relevant information with respect to the structural, business and financial risks of the Company.

Current relevant factors for the rating

The following considerations were of specific relevance for the rating assessment:

- + Strong operating performance in 2023 with recovering profitability ratios compared to 2022
- + Good liquidity situation and noticeably improved Net total debt / EBITDA adj. in 2023
- + Suitable financial and shareholder policy in line with a sound financial structure
- + Expectation of a stable development of the overall result of our key-financial analysis for business year 2024

- Declines in volumes in 2023 driven by adverse market conditions (economic slowdown, inflation)
- Innovation and investment pressure due to stricter environmental regulations
- Broader-based geopolitical tensions pose risks to the disinflationary process
- Expectation of higher cash outflows in 2024 due to due short term liabilities and the share buyback program starting in 2024
- Increased volatility in operating profitability in recent years

ESG-criteria:

CRA generally takes ESG factors (environment, social and governance) into account within its rating decisions. In the case of Heidelberg Materials AG we have not identified any ESG factors with significant influence.

The environmental and climate impact of cement production is particularly severe. Roughly 8% of global greenhouse gas emissions are caused by cement production.¹ Against this background, Heidelberg Materials is, as a globally leading cement producer, particularly subject to climate protection targets and stringent regulations related to carbon dioxide emissions (CO₂ emissions) at both national and international levels, in particular with regard to the European Union Emission Trading System.

Against this backdrop, Heidelberg Materials strives to reduce CO₂ emissions and thus cut future costs by using proven and innovative techniques and measures, such as maximizing the use of

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ESG factors are factors related to environment, social issues, and governance. For more information, please see the section "Regulatory requirements". CRA generally takes ESG relevant factors into account when assessing the rating object, and discloses them when they have a significant influence on the creditworthiness of the rating object, leading to a change in the rating result or the outlook.

¹ Ellis, L. D., Badel, A. F., Chiang, M. L., Park, R. J.-Y. & Chiang, Y.-M. Proc. Natl Acad. Sci. USA 117, 12584–12591 (2020).

alternative fuels, optimizing its product mix, and increasing the efficiency of its plants. In line with the Paris Agreement, the Company has set itself the goal of being carbon neutral by 2050, as well as becoming the most sustainable Company in the building materials industry. To this end, Heidelberg Materials has joined the Science-Based Targets Initiative (SBTi) "Business Ambition for 1.5°C", and together with the SBTi has validated interim targets on the reduction path towards CO₂ neutrality. Among other goals, scope 1 emissions are to be reduced to 400 kg CO₂ per ton of cementitious materials by 2030 (2023: 534 kg), a reduction by almost half as compared to 1990. In addition, scope 2 emissions are to be reduced by 65% by 2030 as compared to 2016. Heidelberg Materials also works closely with industry partners, consultants, and suppliers along the entire product value chain to reduce supply- and transport-related scope 3 emissions.

To achieve its goals, the Company focuses not only on transformation towards a circular economy, but also on the development, implementation and scaling of technical solutions for the capture and use or storage of carbon (carbon capture use and storage; CCUS). This technology is essential for the Company to become climate-neutral in the long term. The Company has a certain pioneering role, as at the end of the year, Heidelberg Materials will commission the world's first industrial-scale carbon capture facility in its cement plant in Brevik, Norway. The facility in Brevik will enable the capture of roughly 400,000t annually, 50 % of the plant's emissions. Based on the industrial scale projects in its pipeline, Heidelberg Materials plans to eliminate approximately 10 million tons of CO₂ emissions by 2030.

In order to reach its climate goals, CO₂ reduction targets have been linked to the compensation system for all members of the Board of Management and for all bonus-eligible employees worldwide as of fiscal year 2021. The full variable compensation can only be achieved if the financial and sustainability targets have been met. The sustainability strategy was also reinforced by the publication of the Sustainability-Linked Financing Framework in 2022, enabling the issuance of various sustainability-related financing instruments.

Overall, we believe that Heidelberg Materials is strategically well-positioned with regard to ESG factors, and is already making good progress, although there are still risks associated with increasingly stringent regulatory requirements, which could constrain Heidelberg Materials' profitability; we have not, however, been able to identify any significant impact on the rating so far. It remains to be seen whether the Company's ambitious targets will be reached. In the future, ESG factors may have a significant impact on our rating assessment, depending on the achievement of the Company's self-imposed targets, as well as on regulatory changes. At this stage, we believe that a more sustainable business model remains essential for the transition to a more climate-friendly economy, although this would require further investment and progress in research.

A general valid description of Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Rating result

The current unsolicited corporate issuer rating of **BBB** attests Heidelberg Materials AG with a highly satisfactory level of creditworthiness, representing a low-to-medium default risk. The rating is based on the Company's strong market position in the building materials industry, its geographical diversification, its solid earnings, and internal financing power. In 2023, the Company was able to significantly improve operating performance compared to 2022, despite ongoing

Please note:

The scenarios are based on information available at the time of the rating. Within the forecast horizon, circumstances may occur that could lead to a change of the rating out of the indicated range.

adverse market conditions (economic slowdown and inflation) affecting volumes. The improvement was largely due to price increases, cost reduction measures, and lower energy prices than in 2022. In addition, the Company once again displayed a solid balance sheet and good liquidity. We see the Company's target of keeping its net financial debt / recurring EBITDA ratio between 1.5x and 2.0x, as well as its strategy of focusing on sustainability, as favorable and aligned with the requirements which the industry is faced with. The Company's exposure to risks related to its high sensitivity to economic developments, the demand for construction materials, energy intensity, exposure to volatile energy prices, dependency on environmental requirements due to its high CO₂ emissions output, and above-average local competition have a dampening effect on our rating assessment.

Outlook

The one-year outlook is **stable**. We expect the Company to continue its development in line with Heidelberg Materials' outlook, despite ongoing adverse market circumstances, in particular due to volatile energy prices and an uncertain global economy due to geopolitical risks and a comparatively low level of construction activity in the European Market. After that, the Company's adjusted EBIT (Result from current operations) should at least remain stable as well as our overall result of our key-financial analysis. Based on our unsolicited initial rating of Heidelberg Materials we see a positive trend in its business performance, in particular due to an improved operating profitability and CRA's leverage ratio. Nevertheless, the Company's reported operating profitability has shown a certain volatility in recent years, which, combined with the current exogenous risks, hinders an upgrade of the outlook. In addition, the very good liquidity situation by the end of 2023 could be reduced as a result of expected higher cash outflows in 2024, but should remain adequate.

Best-case scenario: BBB+

In the best-case scenario for one year, we assume a rating of BBB+, expecting a sustainable improvement in the Company's operating business performance. Its outlook is marked by further growth prospects as a result of stabilizing market conditions. An economic upswing in line with incipient interest rate cuts, against the background of decreasing inflation, favors the construction sector. The funding of the transformation of its business portfolio is carried out without placing stress on leverage. However, the improvement in the level of business and earnings development should be confirmed on a sustained basis while maintaining a solid balance sheet structure, this is why we could initially favor an increase in the outlook.

Worst-case scenario: BBB-

In our worst-case scenario for one year, we assume a rating of BBB-. In this scenario, the Company shows weakened operational performance in the wake of a global economic slowdown, persisting volatile commodity and energy prices, as well as still elevated interest rates, which cause further slowing in house markets. Price adjustments are no longer able to sufficiently compensate for decreasing volume sales and expenses, significantly reducing the Company's potential to deleverage. In this scenario in the wake of lower operating cash flow, liquidity falls to a level that is below our expectations for 2024.

Business development and outlook

Despite persistently challenging market conditions, Heidelberg Materials displayed robust operating performance in 2023. Reported revenues of EUR 21.178 million (2022: EUR 21,095 million) remained broadly stable. Excluding scope and foreign exchange effects, revenues rose by

4.4% thanks to price increases, offsetting declines in volumes. Every business segment recorded declines in volumes due to high financing costs, as well as high energy and commodity prices (although these were lower than in 2022) adversely affecting demand in the construction sector. Infrastructure projects and industrial commercial construction were not sufficient to offset the massive decline in private house building. The segments most impacted were Ready-Mixed Concrete-Asphalt, in particular in Europe and North America, and Service, recording declines in revenues (see table 2). Service, in particular Trading, suffered due to lower material prices and freight rates as a result of the tense economic situation worldwide.

Table 1: Financials of Heidelberg Materials AG | Source: Heidelberg Materials AG Annual report 2023, standardized by CRA

Heidelberg Materials AG Selected key figures of the financial statement analysis Basis: Annual accounts and report of 31.12. (IAS, Group)	CRA standardized figures ²	
	2022	2023
Sales (million EUR)	21,095	21,1778
EBITDA (million EUR)	3,177	3,897
EBIT (million EUR)	1,913	2,661
EAT (million EUR)	1,723	2,087
EAT after transfer (million EUR)	1,597	1,929
Total assets (million EUR)	28,672	30,951
Equity ratio (%)	48.57	47.83
Capital lock-up period (days)	57.84	54.40
Short-term capital lock-up (%)	10.47	17.14
Net total debt / EBITDA adj. (factor)	4.10	3.28
Ratio of interest expenses to total debt (%)	1.03	1.35
Return on Investment (%)	5.94	7.24

Table 2: The revenue development of Heidelberg Materials' main business segments | Source: Consolidated Annual Report 2023, reported information

Heidelberg Materials AG				
In million EUR	2022	2023	Δ	Δ %
Cement	11,006	11,211	205	1.86
Ready-mixed concrete asphalt	5,958	5,895	-63	-1.1
Aggregates	4,727	4,879	152	3.22
Service-other	3,187	2,670	-517	-16.2

CRA's structured EBITDA amounted to EUR 3,897 million (2022: EUR 3,177 million), up by 22.7% compared to 2022. The sharp increase was largely related to lower energy costs compared to 2022, cost reduction measures, and in part due to lower impairments on assets as in the year

² For analytical purposes, CRA adjusted the original values in the financial statements in the context of its financial ratio analysis. For example, when calculating the analytical equity ratio, deferred tax assets, goodwill (entirely or partly), and internally-generated intangible assets are subtracted from the original equity, whilst deferred tax liabilities are added. Net total debt takes all balance sheet liabilities into account. Therefore, the key financial figures shown often deviate from the original values of the company.

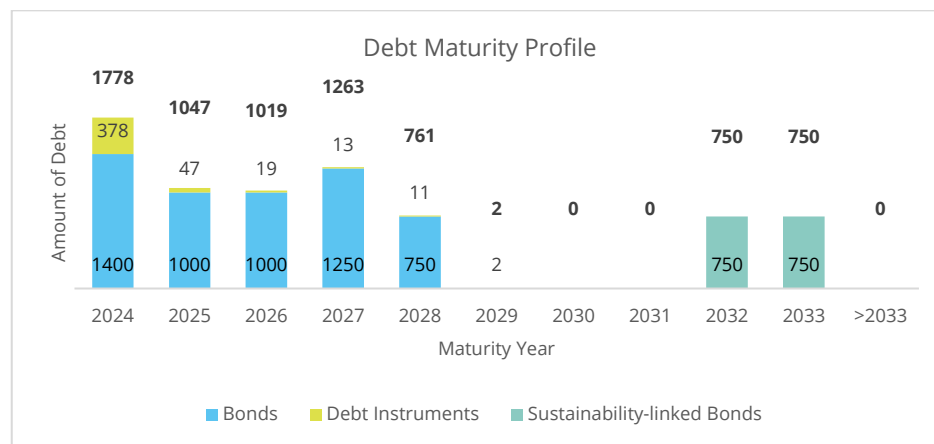
before. Excluding special items, such as restructuring expenses and impairments, the Company's adjusted EBITDA (results from current operations) amounted to EUR 4,258 million (EUR 3,739 million), up by 13.9% showing a record result and enabling a nearly fully recovered margin of 20.1% (2022: 17.7%, 2021: 20.7%). Overall, the Company showed solid recovering profitability ratios (see table 1), just short of 2021 levels.

Cash flow after investments amounted to EUR 1,725 million (2022: EUR 938 million), up by 83.9% compared to 2022, largely as result of improved operating performance and a lower negative working capital change than in the previous year, while net investing activity remained stable. Despite the issuance of two new bonds (total value EUR 1.5 billion), which serve as a refinancing measure (see below), and its shareholder remuneration (including dividend payments of and share buy backs), the Company was able to reduce reported net financial debt by EUR 238 million, standing at EUR 5.3 billion. Heidelberg Materials' leverage ratio net financial debt / recurring EBITDA stood at 1.24x (2021: 1.48x), exceeding the Company's mid-term target corridor of 1.5x-2.0x. Net total debt structured by CRA stood at EUR 12.9 billion (2022: EUR 13.3 billion), so that CRA's leverage ratio net total debt / EBITDA adj. improved to 3.28x (2022: 4.10), reflecting a solid value.

The Company's net CAPEX of EUR 1.042 billion was slightly below its annual planned target of EUR 1,100 million. Investments including acquisitions amounted to nearly EUR 1.850 billion (2022: EUR 1,811 million), and divestments amounted to EUR 370 million (2022: EUR 329 million), reflecting the Company's consistent capital allocation policy. With regard to geographical aspects, more than half of the investments were allocated to countries with a low risk profile - 35.2% in West and South Europe and 27.6% in North America. With regard to its product-mix, most of the Company's investments were allocated to its main product, Cement (59.4%). Its investments were largely to improve its production facilities and reduce CO₂ emissions through the construction of new plants, such as its carbon capture and storage plant in Brevik, Norway.

We deem Heidelberg Material's financial structure as sound, as in 2023 CRA's adjusted equity ratio amounted to 47.8% (2022: 48.6%). The Company pursues a progressive shareholder policy including regularly share buyback programs. For 2024, the Company plans to launch a new share buyback program of EUR 1.3 billion, which is to be closed by 2026. In principle, we see such measures as a constraining factor for the rating, but given its strong equity ratio and reasonable dividend payout ratio (2023: 28.3%), we consider its shareholder remuneration policy to be plausible. In addition, we consider Heidelberg Materials' maturity profile to be relatively well balanced, with a peak due in 2024 (see diagram 1) which is to be settled by the two new issues placed during 2023.

Diagramm 1: Maturity profile of Heidelberg Materials' | Source: Consolidated Annual Report 2023, reported information



As of 31 December 2023, Heidelberg Materials had cash and cash equivalents of EUR 3.3 billion and undrawn committed credit lines of EUR 1.8 billion, covering current financial liabilities roughly 2.4x times, which we consider as good. This liquidity value is due to the early refinancing in 2023 and is expected to fall again in 2024. Considering its operating cash flows after working capital, and deducting regular investing (excluding M&A's) and financing cash outflows, we see an average liquidity cover >180% in the medium term, reflecting also an adequate liquidity position as a result of our short-term rating (see also the section 'Further ratings'). In addition, the Company has a multi-currency sustainability target commercial paper program in the amount of EUR 2.0 billion, which had not been utilized as of the end of the year, as well as factoring programs.

The market conditions for the current year are still challenging despite disinflationary progress, expecting at current stage first interest rate cuts at least on the euro area in the middle of the year, if no major shock occurs or the US inflation affects the decision of the European Central Bank. Demand in the construction sector is still dampened, in particular for residential construction, due to still high financing and commodity costs. This reduced demand could impact price increases. The global economic outlook for 2024 remains moderate compared to the long-term average. In addition, the global economy is still marked by uncertainty due to geopolitical crises, and commodity and energy prices are volatile. There is currently also a high degree of uncertainty as to whether the expected interest rate cuts will follow in the US this year. A sustainable recession and a higher debt build-up in the countries of its relevant markets could have a lasting negative impact on construction investments, including industry and infrastructure construction. However, at the current stage, and in the absence of any major adverse developments on the geopolitical stage, falling interest rates in the Euro area may have a positive effect on the construction climate in the medium term, in the wake of lower financing costs and a more prosperous economy. While we forecast a GDP growth of 0.6% in 2024 for the euro area, we forecast a GDP growth of 1.6% for 2025.³

Despite the persistently adverse market conditions, Heidelberg Materials has a confident outlook for 2024. By means of price adjustments and cost management, it expects to achieve at least a stable result from current operations as compared to 2023, amounting to between EUR 3.0 and 3.3 billion for 2024 (2023: EUR 3.0 billion). Based on its track record and financial targets,

³ For more details see [Creditreform Economic Briefs](#) March 2024 – Inching towards a turning monetary policy cycle

we expect further solid key metrics for 2024, enabling the Company to maintain its current credit profile. A certain deterioration in profitability would enable the Company to maintain its current credit profile, based on a strong equity ratio and as the CRA adj. leverage ratio contains a certain buffer on the current rating scale.

Overall, the Company showed improved operating performance in 2023 despite volume declines and a sound financial structure. Nevertheless, market conditions continue to be marked by uncertainty driven by geopolitical tension and a persistent inflation in the US. In addition, the Company faces strong innovation and investment requirements, despite certain milestones having been reached, due to increasingly strict environmental regulations and competitive pressure. All these factors may dampen Heidelberg Materials' profitability in the medium to long term. Nevertheless, based on its financial positions and strategic measures, we see the Company on a good path to realizing its ambitious transformational plan, and well-positioned to weathering the persistent uncertainty.

Further ratings

In addition to the rating of Heidelberg Materials AG the following Issuer and its issues (see below), have been rated.

- Heidelberg Materials Finance Luxembourg S.A.

Due to the corporate, strategic, liability, financial, economic and performance-related interdependencies of the aforementioned subsidiary (a direct 100% subsidiary of Heidelberg Materials AG and which has been consolidated into the group annual accounts) we derive the unsolicited issuer ratings of the subsidiary from the unsolicited issuer rating of Heidelberg Materials AG and set it equal to its rating of **BBB / stable**.

Based on the long-term issuer rating and taking into account our liquidity analysis, the short-term rating of Heidelberg Materials AG and the above-mentioned subsidiary was set at **L3** (standard mapping), which corresponds to an adequate liquidity assessment for one year.

The rating objects of the issue ratings are exclusively long-term senior unsecured issues, denominated in euro, issued by Heidelberg Materials AG and the above-mentioned subsidiary, which are included in the list of ECB-eligible marketable assets.

Heidelberg Materials AG is guarantor in respect of the issues that have been issued by the above listed group companies under the Euro Medium Term Note programme (EMTN), with the last basis prospectus of 18.04.2024 and with the last amendment of 28.07.2023.

We have provided the long-term local currency senior unsecured notes issued by Heidelberg Materials and the above-mentioned subsidiary with an unsolicited rating of **BBB / stable**. The ratings are based on the respective corporate issuer ratings.

Long-term local currency senior unsecured notes issued by Heidelberg Materials AG and the above-mentioned subsidiary, which have similar conditions to the current EMTN programme, denominated in euro and included in the list of ECB-eligible marketable assets, generally receive the same ratings as the current LT LC senior unsecured notes issued under the EMTN programme. Notes issued in any currency other than euro, or other types of debt instruments, have not yet been rated by CRA. For a list of all currently valid ratings and additional information, please consult the website of Creditreform Rating AG.

Table 3: Overview of CRA Ratings | Source: CRA

Rating Category	Details	
	Date of rating committee	Rating
Heidelberg Materials AG	12.04.2024	BBB / stable / L3
Heidelberg Materials Finance Luxembourg S.A.	12.04.2024	BBB / stable / L3
Long-term Local Currency (LC) Senior Unsecured Issues issued by Heidelberg Materials AG	12.04.2024	BBB / stable
Long-term Local Currency (LC) Senior Unsecured Issues issued by Materials Finance Luxembourg S.A.	12.04.2024	BBB / stable
Other	--	n.r.

Appendix

Rating history

The rating history is available under the following [link](#).

Table 4: Corporate Issuer Rating of Heidelberg Materials AG

Event	Rating created	Publication date	Result
Initial rating	23.08.2017	28.08.2017	BBB / stable

Table 5: Corporate Issuer Rating of Heidelberg Materials Finance Luxembourg S.A.

Event	Rating created	Publication date	Result
Initial rating	23.08.2017	28.08.2017	BBB / stable

Table 6: LT LC Senior Unsecured Issues issued by Heidelberg Materials AG

Event	Rating created	Publication date	Result
Initial rating	23.08.2017	28.08.2017	BBB / stable

Table 7: LT LC Senior Unsecured Issues issued by Heidelberg Materials Finance Luxembourg S.A.

Event	Rating created	Publication date	Result
Initial rating	23.08.2017	28.08.2017	BBB / stable

Table 8: Short-term issuer ratings of Heidelberg Materials AG and Heidelberg Materials Finance Luxembourg S.A.

Event	Rating created	Publication date	Result
Initial rating	12.04.2024	www.creditreform-rating.de	L3

Regulatory requirements

The rating⁴ was not endorsed by Creditreform Rating AG (Article 4 (3) of the CRA-Regulation).

The present rating is, in the regulatory sense, an unsolicited rating that is public. The analysis was carried out on a voluntary basis by Creditreform Rating AG, which was not commissioned by the Issuer or any other third party to prepare the present rating.

The rating is based on the analysis of published information and on internal evaluation methods for the assessment of companies and issues. The rating object was informed of the intention of creating or updating an unsolicited rating before the rating was determined.

⁴ In these regulatory requirements the term "rating" is used in relation to all ratings issued by Creditreform Rating AG in connection to this report. This may concern several companies and their various issues.

The rating object participated in the creation of the rating as follows:

With Rated Entity or Related Third Party Participation	No
With access to Internal Documents	No
With Access to Management	No

A management meeting did not take place within the framework of the rating process.

The documents and information gathered were sufficient to meet the requirements of Creditreform Rating AG's rating methodologies.

The rating was conducted based on the following rating methodologies and the basic document.

Rating methodology	Version number	Date
Corporate Ratings	2.4	July 2022
Corporate Short-Term Ratings	1.0	June 2023
Non-financial Corporate Issue Ratings	2.0	March 2024
Rating Criteria and Definitions	1.3	January 2018

The documents contain a description of the rating categories and a definition of default.

The rating was carried out by the following analysts:

Name	Function	Mail-Address
Christina Sauerwein	Lead-analyst	C.Sauerwein@creditreform-rating.de
Christian Konieczny	Analyst	C.Konieczny@creditreform-rating.de

The rating was approved by the following person (person approving credit ratings, PAC):

Name	Function	Mail-Address
Tobias Stroetges	PAC	T.Stroetges@creditreform-rating.de

On 12 April 2024, the analysts presented the rating to the rating committee and the rating was determined. The rating result was communicated to the company on 15 April 2024. There has not been a subsequent change to the rating.

The rating will be monitored until Creditreform Rating AG withdraws the rating. The rating can be adjusted as part of the monitoring, if crucial assessment parameters change.

In 2011, Creditreform Rating AG was registered within the European Union according to EU Regulation 1060/2009 (CRA-Regulation). Based on this registration, Creditreform Rating AG is allowed to issue credit ratings within the EU and is bound to comply with the provisions of the CRA-Regulation.

ESG-factors

You can find out whether ESG factors were relevant to the rating in the upper section of this rating report "Relevant rating factors".

A general valid description for Creditreform Rating AG, as well as a valid description of corporate ratings for understanding and assessing ESG factors in the context of the credit rating process, can be found [here](#).

Conflict of interests

No conflicts of interest were identified during the rating process that might influence the analyses and judgements of the rating analysts involved or any other natural person whose services are placed at the disposal or under the control of Creditreform Rating AG and who are directly involved in credit rating activities or in approving credit ratings and rating outlooks.

Creditreform Rating AG ensures that the provision of ancillary services does not present conflicts of interest with its credit rating activities and discloses in the final rating reports any ancillary services provided for the rated entity or any related third party. The following ancillary services were provided for the rating entity or for third parties associated with the rated entity:

No ancillary services in the regulatory sense were carried out for this rating object.

For the complete list of provided rating and credit service ancillaries please refer to the Creditreform Rating AG's [website](#).

Rules on the presentation of credit ratings and rating outlooks

The approval of credit ratings and rating outlooks follows our internal policies and procedures. In line with our "Rating Committee Policy", all credit ratings and rating outlooks are approved by a rating committee based on the principle of unanimity.

To prepare this credit rating, Creditreform Rating AG has used following substantially material sources:

Corporate issuer rating:

1. Annual report
2. Website
3. Internet research

Corporate issue rating:

1. Corporate issuer rating incl. information used for the corporate issuer rating
2. Documents on issues / instruments

There are no other attributes and limitations of the credit rating or rating outlook other than those displayed on the Creditreform Rating AG website. Furthermore, Creditreform Rating AG considers as satisfactory the quality and extent of information available on the rated entity. With respect to the rated entity, Creditreform Rating AG regarded available historical data as sufficient.

Between the time of disclosure of the credit rating to the rated entity and the public disclosure, no amendments were made to the credit rating.

The Basic Data Information Card indicates the principal methodology or version of methodology that was used in determining the rating, with a reference to its comprehensive description.

In cases where the credit rating is based on more than one methodology or where reference only to the principal methodology might cause investors to overlook other important aspects of

the credit rating, including any significant adjustments and deviations, Creditreform Rating AG explains this fact in the credit rating report and indicates how the different methodologies or other aspects are taken into account in the credit rating. This information is integrated in the credit rating report.

The meaning of each rating category, the definition of default or recovery and any appropriate risk warning, including a sensitivity analysis of the relevant key rating assumptions such as mathematical or correlation assumptions, accompanied by worst-case scenario credit ratings and best-case scenario credit ratings are explained.

The date at which the credit rating was initially released for distribution and the date when it was last updated, including any rating outlooks, is indicated clearly and prominently in the Basic Data Information Card as a "rating action"; initial release is indicated as "initial rating", other updates are indicated as an "update", "upgrade" or "downgrade", "not rated", "confirmed", "selective default" or "default".

In the case of a rating outlook, the time horizon is provided during which a change in the credit rating is expected. This information is available within the Basic Data Information Card.

In accordance with Article 11 (2) EU-Regulation (EC) No 1060/2009, a registered or certified credit rating agency shall make available, in a central repository established by ESMA, information on its historical performance data including the rating transition frequency and information about credit ratings issued in the past and on their changes. Requested data are available at the [ESMA website](#).

An explanatory statement of the meaning of Creditreform Rating AG's default rates are available in the credit rating methodologies disclosed on the website.

Disclaimer

Any rating performed by Creditreform Rating AG is subject to the Creditreform Rating AG Code of Conduct, which has been published on the web pages of Creditreform Rating AG. In this Code of Conduct, Creditreform Rating AG commits itself – systematically and with due diligence – to establish its independent and objective opinion as to the sustainability, risks and opportunities concerning the enterprise or the issue under review.

Future events are uncertain, and forecasts are necessarily based on assessments and assumptions. This rating is therefore no statement of fact, but an opinion. For this reason, Creditreform Rating AG cannot be held liable for the consequences of decisions made on the basis of any of their ratings. Neither should these ratings be construed as recommendations for investors, buyers or sellers. They should only be used by market participants (entrepreneurs, bankers, investors etc.) as one factor among others when arriving at corporate or investment decisions. Ratings are not meant to be used as substitutes for one's own research, inquiries and assessments.

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