

Japan Credit Rating Agency, Ltd. (JCR) announces the following credit rating.

Showa Denko K.K. (security code: 4004)

<Assignment>

Subordinated Loan: BBB+

Rationale

<Issuer's Profile>

Showa Denko K.K. (the "Company") is one of major diversified chemicals companies. Based on technologies related to inorganics, aluminum and organics chemicals, the Company produces characteristic products. HC Holdings K.K. ("HC HD"), a wholly-owned subsidiary of Showa Denko K.K., announced on April 21 that it would issue preferred shares (paid-in amount: JPY 275 billion). The funds raised by the issue of preferred shares will be appropriated for a part of tender offer by Showa Denko through HC HD of shares in Hitachi Chemical Company, Ltd. The preferred shares will be acquired by HC HD and be purchased by the Company, and the Company today entered into an agreement on subordinated committed syndicated loan (total committed amount: JPY 275 billion) for the purpose of ensuring resources of the purchase. Please refer to JCR's press release 20-D-0051 and 20-D-0052 for the Company's long-term issuer rating and assessment of equity content of HC HD's preferred shares ("medium or 50%"), respectively.

<Assessment of Equity Content of Loans and Rationale>

JCR assigned a rating to the Subordinated Loan of the Company, two notches below the long-term issuer rating.

In rating hybrid securities including subordinated loans, JCR sees: (i) probability of deferral of interest or dividend payments in accordance with the deferral clause (probability of deferral) is usually higher than the probability of the Company's falling into default (probability of default); and (ii) ranking of claims is subordinated to the ranking of ordinary debts at the time of bankruptcy, and as a result, the probability of recovery is lower (subordination property).

Ranking of claims to the Subordinated Loan at the time of the Company's bankruptcy, ranking *pari passu* with the first preferred stock, is subordinated to all debts (excluding the Subordinated Loan and the subordinated debts ranking *pari passu* with the Subordinated Loan). Furthermore, optional interest suspension clause is stipulated for the interest payments. JCR has a view that probability of actual suspension of interest payments is low at the moment, taking into account, among others, financial conditions of the Company. JCR decided the notching from the long-term issuer rating in light of such subordination property and deferral clause.

<Assessment of Equity Content of Loans and Rationale>

JCR determined the equity content of the Subordinated Loan at "medium or 50%" (against 100 of a stock). The purpose of the conclusion of the loan agreement is to ensure funds for HC HD's acquisition and the Company's purchase of the preferred shares that are assumed going forward. If the acquisition and/or purchase are realized, the preferred shares will be substantially transferred to this Subordinated Loan. As for the preferred shares and the Subordinated Loan, as key points in assessment of equity content including annual dividend rate and interest rate step-up, exceptions to replacement, terms and conditions for suspension of dividend and interest payments are designed in the same manner, JCR assessed the equity content for both instruments as the one.

JCR takes into account that "there is no obligation to redeem principal or no maturity," "there is no obligation to pay dividends" and "the ranking of claims at the time of bankruptcy is subordinated" when assessing the equity content of hybrid securities.

While the period to maturity is as extremely long as 35 years, early repayment is possible after a lapse of 5 years (period from the issue of the preferred shares, the same applies hereafter). In addition, early repayment, etc. as a result of occurrence of Tax Events or Rating Events owing to changes in assessment of equity content by a credit rating agency are also possible. As for interest rate, as it is

set to step up 5 years later and will be higher by 100 bps from the initial rate, incentives for the early repayment are high. The Company, however, expressed its intention not to early repay the Subordinated Loan without issue of replacement securities, etc. (replacement). This expression defines exemptions that allow the Company to forgo the replacement if it can satisfy certain financial indicators, provided that such indicators defined in the exemptions are reasonably improved. Therefore, JCR considers it is unlikely that the Company will make an early repayment without replacement when its creditworthiness declines and thus factored this view into the assessment of effective repayment obligations and maturity. This judgment reflects, along with other factors, that JCR, based on hearing from the Company, was able to ascertain the Company's future financial management policy including the position of the Subordinated Loan and that the Company has been winning the confidence of investors and creditors by maintaining good relations with them in the financial market;

As for the interest, the fact that there is no clause for mandatory interest suspension weakens the similarity of the Subordinated Loan to common stock. However, the optional interest suspension clause provides a mechanism whereby the interest payments can be suspended in a stressful situation. JCR also took into consideration the facts including the fact that the ranking of claims to the Subordinated Loan is subordinated to the ranking of claims to the senior obligations of the Company at the time of bankruptcy as well as these mechanisms for maturity and interest suspension.

JCR will consider lowering its assessment of equity content of the Subordinated Loan to "low or 25%" when the remaining period becomes less than 30 years.

Mikiya Kubota, Takeshi Fujita for Issuer
Kiichi Sugiura, Yasuhiro Shimoda for Hybrid Securities

Rating

Issuer: Showa Denko K.K.

<Assignment>

Issue	Amount	Drawdown Date	Due Date	Int. Rate	Rating
Subordinated Committed Syndicated Loan	(Note 1)	(Note 2)	Apr. 27, 2055	(Note 3)	BBB+

(Note 1): Borrowing Limit: JPY 275 billion

(Note 2): Drawdown: from April 27, 2020 to April 27, 2025; 1 drawdown is possible during this period

(Note 3): Yen TIBOR + spread till the day before interest payment date in April 2025

Yen TIBOR + initial spread + 1.0% on and after interest payment date in April 2025

Early Repayment:	Repayment after the lapse of 5 years from the contract day Repayment upon occurrence of Tax Events or Rating Events Repayment by agreements with all lenders and agents
Replacement:	There has been representation of intention for replacement.
Optional Interest Suspension:	The Borrower may suspend interest payment at its discretion.
Mandatory Interest Suspension:	No provisions
Accumulation/Non-Accumulation:	Accumulation
Ranking of Claims:	The loan is subordinated to all debts (excluding the loan and the subordinated debts ranking pari passu with the loan) and ranks pari passu with the first preferred stock

<Reference>

Long-term Issuer Rating: A Outlook: Negative

<Outline of Preferred Shares>

Issuer: HC Holdings K.K.

Issue	Amount (bn)	Issue Date	Due Date	Annual Dividend Rate
Class A Preferred Shares	JPY 275	Apr. 27, 2020	No Maturity	(Note)

(Note): swap rate + spread till the day before the corresponding day after the lapse of 5 years from the Issue Date. On and after the corresponding day after the lapse of 5 years from the Issue Date, Yen TIBOR + initial spread + 1.0%

Acquisition/ Purchase:	Acquisition on and after the corresponding day after the lapse of 5 years from the Issue Date Purchase by Showa Denko
Replacement:	There has been representation of intention for replacement.
Optional Dividend Suspension:	The issuer may suspend dividend payment at its discretion.
Mandatory Dividend Suspension:	No provisions
Accumulation/Non-Accumulation:	Accumulation
Ranking of Claims:	The preferred shares are subordinated to all debts (excluding the preferred shares and the subordinated debts ranking pari passu with the preferred shares) and rank pari passu with the first preferred stock

Rating Assignment Date: April 27, 2020

The criteria used for identifying matters which serve as assumptions for the assessment of the credit status, and the criteria used for setting of grades indicating the results of the assessments of the credit status are published as "Types of Credit Ratings and Definitions of Rating Symbols" (January 6, 2014) in Information about JCR Ratings on JCR's website (<https://www.jcr.co.jp/en/>).

Outline of methodology for determination of the credit rating is shown as "JCR's Rating Methodology" (November 7, 2014), "Chemicals" (March 26, 2012), "Ratings of Hybrid Securities" (September 10, 2012) and "Rating Methodology for Assessment of Hybrid Securities' Equity Content" (July 27, 2017) in Information about JCR Ratings on JCR's website (<https://www.jcr.co.jp/en/>).

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JCR publishes its press releases regarding the rating actions both in Japanese and in English on the same day. In case that it takes time to translate rating rationale, JCR may publicize the summary version, which will be replaced by the full translated version within three business days. (Regarding Structured Finance products, JCR only publicize the summary version in English.)

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INFORMATION DISCLOSURE FORM

Japan Credit Rating Agency, Ltd.

Disclosure Required by Paragraph (a)(1)(ii) of Rule 17g-7

Issuer:	Showa Denko K.K.
Rating Publication Date:	April 27, 2020

1 The Symbol, Number, or Score in the Rating Scale used to Denote Credit Rating Categories and Notches and, the Identity of the Obligor or the Identity and a Description of the Security or Money Market Instrument as Required by Paragraph (a)(1)(ii)(A) of Rule 17g-7

- Please see the news release.

2 The version of the procedure or methodology used to determine the credit rating; as Required by Paragraph (a)(1)(ii)(B) of Rule 17g-7

- Please see the news release.

3 The Main Assumptions and Principles used in Constructing the Procedures and Methodologies used to Determine the Credit Rating as Required by Paragraph (a)(1)(ii)(C) of Rule 17g-7

- The credit rating methodology assumes, in principle, to be applied to assess the likelihood of a given debt payment in light of its issuer's condition and business environment, etc. in the relevant future. There is certain limitation, however, in the time horizon that the rating foresees.
- The credit rating methodology assumes, in principle, that the factors posted in the below are particularly important for such likelihood to be determined, and that the rating determination is made by evaluating each of them not only quantitatively but also employing qualitative analyses.

A) Business Bases

The likelihood of a given debt payment is highly conditional to its issuer's business bases - how they can be maintained/ expanded into the future and thereby secure earnings and cash flows in adequacy and in a sustainable way.

B) Financial Grounds and Asset Quality

The likelihood of debt payment is highly dependent on the degree of the issuer's indebtedness and loss absorption capacity in terms of equity capital. Also notable is that a financial institution might see a significant loss of financial grounds as a result of changes in value of the assets under its possession.

C) Liquidity Positions

The likelihood of debt payment is highly dependent on the adequacy of the issuer's cash and other sources of repayment (liquidity positions).

D) Related Parties' Status and Stance of Support/ Assistance for the Issuer

The likelihood of debt payment is affected one way or the other by the issuer's related parties such as parent company, subsidiary, guarantor, and the government of the issuer's business domicile, etc. - by their own conditions and/ or position of support/ assistance for the issuer.

E) Order of Seniority in Debt Payment

The likelihood of debt payment can be different between given debts of the same issuer. The likelihood of debt payment for an individual debt is dependent on the issuer's discretion, and/ or its rank relative to other debts of the same issuer in the order of seniority in principal/ interest payment which is determined by design as financial product or by laws, etc.

4 The Potential Limitations of the Credit Rating as Required by Paragraph (a)(1)(ii)(D) of Rule 17g-7

- The credit rating herewith presented by JCR is its summary opinion with regard to the likelihood of given debt payment and hence not necessarily a perfect representation of such likelihood. The credit rating is not intended to estimate the probability of default or the loss on given default, either.
- The objective of the credit rating herewith presented does not include any concerns other than the likelihood of debt payment, such as risks of price changes, market liquidity, etc.
- The credit rating herewith presented is necessary to be reviewed along with possible changes of the issuer of rated objects in its business performance and/ or circumstances which include regulatory environment, and hence subject to possible alteration.

5 Information on the Uncertainty of the Credit Rating as Required by Paragraph (a)(1)(ii)(E) of Rule 17g-7

- The information used for the determination of credit rating as herewith presented is obtained by JCR from the issuer of rated objects and other sources that JCR trusts in terms of accuracy and reliability but possibly contains errors due to human, non-human or other causes. Consequently, the credit rating determined on the grounds of such information does not constitute, explicitly or implicitly, any representation or warrant of JCR on the information itself or any consequences of its use in terms of accuracy, relevance, timeliness, wholeness, market value, or usefulness for any specific purposes.

6 Use of Due Diligence Services of a Third Party in Taking the Rating Action as Required by Paragraph (a)(1)(ii)(F) of Rule 17g-7

- There is no use of any third-party due diligence service in the determination of the credit rating herewith presented.

7 Use of Servicer or Remittance Reports to Conduct Surveillance of the Credit Rating Required by Paragraph (a)(1)(ii)(G) of Rule 17g-7

- There is no use of any servicer or remittance report to conduct surveillance of the credit rating herewith presented.

8 The Types of Data Relied Upon for the Purpose of Determining the Credit Rating as Required by Paragraph (a)(1)(ii)(H) of Rule 17g-7

- The information posted in the below, which includes data, is used for the determination of the credit rating herewith presented.

- A) Audited financial statements presented by the rating stakeholders
- B) Explanations of business performance, management plans, etc. presented by the rating stakeholders
- C) Documentation of the rated financial product presented by the rating stakeholders

9 Overall assessment of the Quality of Information Available and Considered in Determining the Credit Rating as Required by Paragraph (a)(1)(ii)(I) of Rule 17g-7

- JCR holds its basic policies for securing the quality of information as a base of due diligence for the determination of credit ratings. The information used as a base for the determination of credit rating herewith presented satisfies such policies, which include the audit by an independent auditor, the publication by the issuer or some independent media or, otherwise, JCR analyst's scrutiny, etc.
- JCR sees no particular weakness in the quality of information used for the determination of the credit rating herewith presented as compared to the information used in other cases of the credit rating for comparable issuers or ratable objects.

10 Information Relating to Conflicts of Interest as Required by Paragraph (a)(1)(ii)(J) of Rule 17g-7

- JCR receives payment of compensation for the determination of the credit rating herewith presented from either one of those parties who are issuer, underwriter, depositor or sponsor.
- JCR received in the last fiscal year in the past payment of compensation from the same party for any kind of JCR's service other than the determination of credit rating, such as one in the ancillary business.

11 Explanation or Measure of the Potential Volatility of the Credit Rating as Required by Paragraph (a)(1)(ii)(K) of Rule 17g-7

A) Business Bases

The credit rating is subject to alteration if there is improvement or deterioration of the issuer's business bases, since its revenue, etc. may improve or deteriorate by the change in its business management policies, clients' preferences, competitive situation, or a technological innovation. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change in the business bases is large.

B) Financial Grounds and Asset Quality

The credit rating is subject to alteration if the issuer increases/ decreases its debt/ capital or vice versa and thereby makes its individual debt payment liability less or more bearable and its loss absorption capacity into the future decreased or increased. Also, the changes in the quality of asset under the issuer's holding may affect the credit rating, since such changes could raise or lower the likelihood of future loss of the issuer's financial grounds. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change in the financial grounds and/ or asset quality is large.

C) Liquidity Positions

The credit rating is subject to alteration if there is a change in the issuer's financial management policy or in the relations with fund procurement sources and the change thereby makes its liquidity positions improve or deteriorate. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change is large.

D) Related Parties' Status and Stance of Support/ Assistance for the Issuer

The credit rating is subject to alteration if there is a change in the issuer's parent company or subsidiary, guarantor or other provider of credit enhancement, or the government of the issuer's business domicile, or other related parties' own conditions and/ or position of support/ assistance for the issuer, and the change thereby makes its business bases, financial grounds and/ or liquidity positions improve or deteriorate, and/ or making the effectiveness of guarantee and other credit enhancement improve or deteriorate. The resultant alteration of the credit rating is usually a notch, with possibility of a few notches if and when the change is large.

E) Order of Seniority in Debt Payment and Non-Payment Forgiven by Contract

The credit rating is subject to alteration if there is a change in the rated debt's status in the order of seniority relative to other debts caused by the improvement/ deterioration of the issuer's financial condition. The resultant alteration of the credit rating is usually a notch, with possibility of a few notches if and when the change is large. Also, in case of the financial products for which non-payment of interest/ principal is contractually permissible, the credit rating is subject to alteration if and when the likelihood of such non-payment is projected to increase or decrease. The resultant alteration of the credit rating could be by a notch but often as much as a few notches.

F) Rise and Fall in General Economy and Markets

The credit rating is subject to alteration if there is a rise/ fall in the general economy and/ or the markets inducing the issuer's revenues/ expenses to increase/ decrease and vice versa, etc. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change is exceptionally large.

G) Various Events

The credit rating is subject to alteration on occurrence of various events, such as change in the issuer's major shareholders, M&A and other organizational change, accident, violation of the law, litigation, legal/ regulatory change, natural disaster, etc., which are unforeseeable at the time when the credit rating is determined, causing a significant change on the issuer's business bases, financial grounds, etc. The resultant alteration of the credit rating could be by a notch but more often than not as much as a few notches.

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Information on the Content of the Credit Rating, Including the Historical Performance of the Credit Rating and the Expected Probability of Default and the Expected Loss in the Event of Default as Required by Paragraph (a)(1)(ii)(L) of Rule 17g-7

- The credit rating herewith presented by JCR is its summary opinion with regard to the likelihood of given debt payment and hence not necessarily a perfect representation of such likelihood. The credit rating is not intended to estimate the probability of default or the loss on given default, either.
- Facts of the probability of default are posted as Form NRSRO Exhibit 1 on the JCR website under the URL:

<https://www.jcr.co.jp/en/service/company/regu/nrsro/>

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Information on the Sensitivity of the Credit Rating to Assumptions Made as Required by Paragraph (a)(1)(ii)(M) of Rule 17g-7

A) Business Bases

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's business bases and powers of earning or cash flow generation, etc. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's business bases on some drastic change in the operational environments, etc.

B) Financial Grounds and Asset Quality

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's financial grounds and asset quality. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but

possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's financial grounds and/ or asset quality on some drastic change in its business bases.

C) Liquidity Risks

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's liquidity positions. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's liquidity positions on some drastic change in its financial management policy or relations with fund procurement sources, etc.

D) Order of Seniority in Debt Payment and Non-Payment Forgiven by Contract

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the order of seniority in repayment of interests and principal. JCR assumes the resultant change of the credit rating is most likely by a notch. The change could be as much as a few notches if the issuer's financial structure differs so much and thereby the balance between debts shifted so greatly. Rating change is also possible in case of the financial products for which non-payment of interest/ principal is contractually permissible, if and when the assumptions made at the time of its determination turns out to be inaccurate. The change of the credit rating is assumed to be by a notch but often as much as a few notches.

E) Rise and Fall in General Economy and Markets

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the prospects of general economy and markets. JCR expects the change should be most likely by a notch but could be as much as a few notches, should the economy or the markets change so greatly.

14 Information on the Representations, Warranties, and Enforcement Mechanisms of an Asset-backed Security as Required by Paragraph (a)(1)(ii)(N) of rule 17g-7

- The credit rating herewith presented is not for an ABS product, and hence no relevant issue.

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Attestation Required by Paragraph (a)(1)(iii) of Rule 17g-7

I, Shigenobu Tonomura, have responsibility to this Rating Action and to the best of my knowledge:

- A) No part of the credit rating was influenced by any other business activities.
- B) The credit rating was based solely upon the merits of the obligor, security, or money market instrument being rated.
- C) The credit rating was an independent evaluation of the credit risk of the obligor, security, or money market instrument.

殿村 成信

Shigenobu Tonomura

General Manager of Corporate Rating Department II

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