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Independent auditor's report

To Evonik Industries AG, Essen

Report on the audit of the Consolidated Financial Statements

Audit Opinion on the Consolidated Financial Statements

We have audited the consolidated financial statements of Evonik Industries AG, Essen, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at December 31, 2016, and the consolidated income statement, the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from January 1, to December 31, 2016, and notes to the consolidated financial statements, including a summary of significant accounting policies.

According to § (Article) 322 Abs. (paragraph) 3 Satz (sentence) 1 zweiter Halbsatz (second half sentence) HGB ("Handelsgesetzbuch": German Commercial Code), we state that, in our opinion, based on the findings of our audit, the accompanying consolidated financial statements comply, in all material respects, with IFRS, as adopted by the EU, and the additional requirements of German commercial law pursuant to § 315a Abs. 1 HGB and give a true and fair view of the net assets and financial position of the Group as at December 31, 2016, as well as the results of operations for the financial year from January 1, to December 31, 2016, in accordance with these requirements.

According to § 322 Abs. 3 Satz 1 erster Halbsatz HGB, we state that our audit has not led to any reservations with respect to the propriety of the consolidated financial statements.

Basis for Audit Opinion on the Consolidated Financial Statements

We conducted our audit in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW), and additionally considered the International Standards on Auditing (ISA). Our responsibilities under those provisions and standards, as well as supplementary standards, are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements" section of our report. We are independent of the Group entities in accordance with

the provisions under German commercial law and professional requirements, and we have fulfilled our other German ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from January 1, to December 31, 2016. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon, and we do not provide a separate audit opinion on these matters.

In our view, the key audit matters were as follows:

- ① Recoverability of goodwill
- ② Pension provisions

Our presentation of these key audit matters has been structured as follows:

- ① Matter and issue
- ② Audit approach and findings
- ③ Reference to further information

① Recoverability of goodwill

① In the consolidated financial statements of Evonik Industries AG a total amount of €2.8 billion in goodwill, which represents 14% of consolidated total assets, has been reported under the balance sheet line item "Intangible assets". Goodwill is tested by the Company for impairment as of the balance sheet date or if there are indications that goodwill may be impaired. The result of this measurement depends to a large extent on management's assessment of future cash inflows and the discount rate used, and is subject to considerable uncertainty. Against this background and due to the underlying complexity of the measurement of this material item, this matter was of particular importance during our audit.

② As part of our audit we, among other things, examined the method used for performing impairment tests. We satisfied ourselves as to the appropriateness of the expected future cash inflows used in the impairment tests in financial year 2016 by, inter alia, comparing this data with the current budgets from the medium-term planning adopted by management and approved by the supervisory board, and reconciling it against general and sector-specific market expectations. Supplementary adjustments to the medium-term planning for the purpose of the impairment test were discussed by us with the departments responsible and evaluated. With the knowledge that even relatively small changes in the discount rate applied, particularly in the "Performance Materials" segment, can have material effects on the amount of goodwill calculated in this way, we also focused in depth on the determination of the parameters used for the discount rate applied, including weighted average cost of capital, and evaluated the measurement model. Due to the materiality of goodwill and the fact that its measurement also depends on economic conditions which are outside of the Company's sphere of influence, we carried out our own sensitivity analyses for cash-generating units in addition to the Company's analyses and found that, taking the information available into account, the respective goodwill was sufficiently covered by the discounted future cash surpluses. The measurement inputs and assumptions used by management are in line with our expectations.

③ The Company's goodwill disclosures are contained in sections 3.6 and 4. of the notes to the consolidated financial statements.

② Pension provisions

① In the consolidated financial statements of Evonik Industries AG pension provisions of €3.9 billion, which represent 20% of consolidated total assets, have been reported. The provision is the net amount of the present value of defined benefit plan obligations of €11.6 billion and the fair value of plan assets of €7.8 billion plus a surplus of plan assets of €0.1 billion that cannot be recognized as an asset due to the asset ceiling. The vast majority of this is attributable to post-employment benefit commitments in Germany, the USA and the United Kingdom; in addition there are also, to a lesser extent, obligations from medical plans in the USA. Defined benefit plan and medical plan obligations are measured using the

projected unit credit method in accordance with IAS 19. This requires in particular that assumptions be made about the long-term salary and pension trend, as well as average life expectancy and cost trends for medical plans. Furthermore, the discount rate as of the balance sheet date must be derived from the market yields of high-quality, currency-congruent corporate bonds with terms that match the expected maturities of the obligations. Changes in these actuarial assumptions must be recognized as actuarial gains or losses in other comprehensive income. In the past financial year this resulted in actuarial losses of €1.0 billion on the liability side which mainly arose from changes in the discount rate and the long-term pension trend. From our point of view, these matters were of particular importance, as recognition and measurement of these material items are to a large extent based on management's estimates and assumptions.

② During our audit, we evaluated the actuarial reports obtained by the respective group entities. In view of the specific characteristics of actuarial calculations, we were supported in this by our pensions specialists who reviewed the actuarial model on which the measurements were based and the measurement inputs applied for compliance with standards and appropriateness. In addition, based on the actuarial reports, the changes in obligations as well as the cost components were analyzed and checked for reasonableness against the background of the changes that had occurred in the measurement inputs and the numerical data. Finally, the accounting entries for the provisions and the disclosures in the notes to the consolidated financial statements were reconciled based on the actuarial reports. For the audit of the fair value of the share in Vivawest GmbH included in plan assets, we had an internal company valuation at our disposal which we reviewed. Furthermore, we obtained bank confirmations for the fair values of directly held listed securities, fund units and bank balances included in plan assets. For listed securities whose bank confirmations did not contain fair values, unlisted bonds and directly held structured products, as well as fund units, we tested, with the involvement of our internal specialists, samples of the processes on which the respective measurement was based as well as samples of the measurement inputs used. Based on our audit procedures, we were able to satisfy ourselves that the recognition and measurement of this material item were appropriate and that the disclosures required by IAS 19 in the notes to the consolidated financial statements were complete.

③ The pension provision disclosures are contained in section 7.8 of the notes to the consolidated financial statements.

Other Information

Management is responsible for the other information. The other information comprises

- the Corporate Governance Report according to section 3.10 of the German Corporate Governance Code,
- the Corporate Governance Statement pursuant to § 289a HGB and § 315 Abs. 5 HGB, as well as
- other parts of the annual report of Evonik Industries AG, Essen, for the financial year ended on December 31, 2016, which were not subject of our audit.

Our audit opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information, and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation of the consolidated financial statements, which comply with IFRS, as adopted by the EU, and the additional German legal requirements applicable under § 315a Abs. 1 HGB, and give a true and fair view of the net assets, financial position and results of operations of the Group in accordance with these requirements. Furthermore, management is responsible for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements

Our objective is to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our audit opinion on the consolidated financial statements. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW), under additional consideration of the ISA, will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with § 317 HGB and German generally accepted standards for the audit of financial statements promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW), under additional consideration of the ISA, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or the group management report or, if such disclosures are inadequate, to modify our audit opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the net assets and financial position as well as the results of operations of the Group in accordance with IFRS, as adopted by the EU, and the additional German legal requirements applicable under § 315a Abs. 1 HGB.
- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an audit opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our report on the audit of the consolidated financial statements unless law or regulation precludes public disclosure about the matter.

Other legal and regulatory requirements

Report on the Audit of the Group Management Report

Audit Opinion on the Group Management Report

We have audited the group management report of Evonik Industries AG, Essen, which is combined with the Company's management report, for the financial year from January 1, to December 31, 2016.

In our opinion, based on the findings of our audit, the accompanying group management report as a whole provides a suitable view of the Group's position. In all material respects, the group management report is consistent with the consolidated financial statements, complies with legal requirements and suitably presents the opportunities and risks of future development.

Our audit has not led to any reservations with respect to the propriety of the group management report.

Basis for Audit Opinion on the Group Management Report

We conducted our audit of the group management report in accordance with § 317 Abs. 2 HGB and German generally accepted standards for the audit of management reports promulgated by the Institut der Wirtschaftsprüfer (Institute of Public Auditors in Germany) (IDW). We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management and Those Charged with Governance for the Group Management Report

Management is responsible for the preparation of the group management report, which as a whole provides a suitable view of the Group's position, is consistent with the consolidated financial statements, complies with legal requirements, and suitably presents the opportunities and risks of future development. Furthermore, management is responsible for such policies and procedures (systems) as management determines are necessary to enable the preparation of a group management report in accordance with the German legal requirements applicable under § 315 Abs. 1 HGB and to provide sufficient and appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the group management report.

Auditor's Responsibilities for the Audit of the Group Management Report

Our objective is to obtain reasonable assurance about whether the group management report as a whole provides a suitable view of the Group's position as well as, in all material respects, is consistent with the consolidated financial statements as well as the findings of our audit, complies with legal requirements, and suitably presents the opportunities and risks of future development, and to issue an auditor's report that includes our audit opinion on the group management report.

As part of an audit, we examine the group management report in accordance with § 317 Abs. 2 HGB and German generally accepted standards for the audit of management reports promulgated by the IDW. In this connection, we draw attention to the following:

- The audit of the group management report is integrated into the audit of the consolidated financial statements.
- We obtain an understanding of the policies and procedures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these policies and procedures (systems).
- We perform audit procedures on the prospective information presented by management in the group management report. Based on appropriate and sufficient audit evidence, we hereby, in particular, evaluate the material assumptions used by management as a basis for the prospective information and assess the reasonableness of these assumptions as well as the appropriate derivation of the prospective information from these assumptions. We are not issuing a separate audit opinion on the prospective information or the underlying assumptions. There is a significant, unavoidable risk that future events will deviate significantly from the prospective information.
- We are also not issuing a separate audit opinion on individual disclosures in the group management report; our audit opinion covers the group management report as a whole.

Responsible Auditor

The auditor responsible for the audit is Lutz Granderath.

Düsseldorf, February 20, 2017

**PricewaterhouseCoopers
Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft**

sgd. Lutz Granderath
Wirtschaftsprüfer
(German Public Auditor)

sgd. Antje Schlotter
Wirtschaftsprüferin
(German Public Auditor)

Further information on corporate officers

Supervisory Board of Evonik Industries AG

Dr. Werner Müller, Mülheim an der Ruhr

Chairman of the Supervisory Board
Chairman of the Executive Board of RAG-Stiftung

- a) Borussia Dortmund GmbH & Co. KGaA
RAG Aktiengesellschaft (Chair)
RAG Deutsche Steinkohle AG (Chair)
- b) Contilia GmbH
Stadler Rail AG, Bussnang (Switzerland)

Edeltraud Glänzer, Hanover

(since May 19, 2016)
Deputy Chairwoman of the Supervisory Board
(since May 19, 2016)

Deputy Chairperson of the Mining, Chemical
and Energy Industrial Union (IG BCE)

- a) B. Braun Melsungen AG
Merck KGaA
Solvay GmbH (until October 15, 2016)

Martin Albers, Dorsten

Deputy Chairman of the Works Council
for the Essen Campus facilities

- a) Pensionskasse Degussa VVaG
- b) PEAG Holding GmbH

Prof. Barbara Albert, Darmstadt

Professor of Solid State Chemistry at the
Eduard-Zintl Institute of Inorganic and
Physical Chemistry of the Technical University
of Darmstadt

- a) Schunk GmbH & Co. KG (since April 13, 2016)

Karin Erhard, Hanover

Board Secretary to the Pay-Scale/Finances Division of the
Mining, Chemical and Energy Industrial Union (IG BCE)

- a) INEOS Deutschland GmbH
INEOS Köln GmbH

Carmen Fuchs, Alzenau

Chairperson of the Works Council for the Hanau facilities
(since September 1, 2016)

- a) Pensionskasse Degussa VVaG

Stephan Gemkow, Overath

Chairman of the Management Board of
Franz Haniel & Cie. GmbH

- a) TAKKT AG (Chair)
- b) JetBlue Airways Corporation, New York (USA)

Prof. Barbara Grunewald, Bonn

Chair for Civil Law and Commercial Law
at the University of Cologne

Ralf Hermann, Herten

Chairman of the Group Works Council
of Evonik Industries AG

- b) RAG-Stiftung

Prof. Wolfgang A. Herrmann, Freising

President of Munich Technical University

- b) Bayerische Forschungsallianz GmbH (Chair)

Frank Löllgen, Cologne

Regional Director North Rhine of the Mining, Chemical
and Energy Industrial Union (IG BCE)

- a) Bayer AG

Dr. Siegfried Luther, Gütersloh

Former CFO of Bertelsmann AG

- a) Schaeffler AG
Sparkasse Gütersloh-Rietberg

Norbert Pohlmann, Essen

Chairman of the Works Council for the
Goldschmidtstraße facilities

- a) BKK Novitas

Dr. Wilfried Robers, Gescher

Chairman of the Executive Staff Council
of the Evonik Group

- a) Pensionskasse Degussa VVaG

Michael Rüdiger, Utting am Ammersee

Chief Executive Officer of DekaBank Deutsche Girozentrale

- a) Deka Immobilien GmbH
Deka Investment GmbH (until September 30, 2016
and again since January 1, 2017)
(Chairman until September 30, 2016 and again
since January 9, 2017)
Landesbank Berlin Investment GmbH (Chair)
(until September 30, 2016)
Liquiditäts-Konsortialbank GmbH in liquidation (Chair)

Anke Strüber-Hummelt, Marl

(since May 19, 2016)

Chairperson of the Works Council for the Marl facilities

(since January 1, 2017)

a) Evonik Resource Efficiency GmbH

Ulrich Terbrack, Reinheim

Deputy Chairman of the Group Works Council of Evonik Industries AG

Angela Titzrath, Hamburg

(since May 19, 2016)

Member (since October 1, 2016) and Chairperson

(since January 1, 2017) of the Executive Board of

Hamburger Hafen und Logistik AG

a) AXA Konzern Aktiengesellschaft

Ulrich Weber, Krefeld

(since May 19, 2016)

Member of the Board of Management of Deutsche Bahn AG responsible for Human Resources

a) DB Cargo AG

Schenker AG

DB Gastronomie GmbH (Chair)

DB JobService GmbH (Chair)

DB Zeitarbeit GmbH (Chair)

DEVK Deutsche Eisenbahn Versicherung

Lebensversicherungsverein a. G.

Betriebliche Sozialeinrichtung der Deutschen Bahn

DEVK Deutsche Eisenbahn Versicherung

Sach- und HUK-Versicherungsverein a. G.

Betriebliche Sozialeinrichtung der Deutschen Bahn

HDI Global SE

Dr. Volker Trautz, Munich

Former Chairman of the Management Board of LyondellBasell Industries

a) Citigroup Global Markets Deutschland AG

b) CERONA Companhia de Energia Renovável,

São Paulo (Brazil)

OSF Merchant Banking, São Paulo (Brazil)

(until June 30, 2016)

Perstorp Holding AB, Malmö (Sweden)

The following gentlemen left the Supervisory Board in 2016**Michael Vassiliadis, Hanover**

(until May 18, 2016)

Deputy Chairman of the Supervisory Board

Chairman of the Mining, Chemical and Energy

Industrial Union (IG BCE)

a) BASF SE

K+S AG

RAG Aktiengesellschaft

RAG Deutsche Steinkohle AG

STEAG GmbH

b) RAG-Stiftung

Dieter Kleren, Wesseling

(until May 18, 2016)

Chairman of the Works Council for the Wesseling facilities

Steven Koltes, St. Moritz (Switzerland)

(until May 18, 2016)

Co-Chairman CVC Capital Partners Group

b) Frontiers Media S.A. (Switzerland)

Kaltroco Limited (Jersey)

Dr. Christian Wildmoser, Surpierre (Switzerland)

(until May 18, 2016)

Managing Director of CVC Capital Partners

Switzerland GmbH

b) Sigma Group Holdings S.à r.l. (Luxembourg)

a) Membership of other statutory supervisory boards.

b) Membership of comparable German and foreign supervisory bodies of business enterprises pursuant to Section 125 Paragraph 1 Sentence 5 of the German Stock Corporation Act (AktG).

Executive Board of Evonik Industries AG

Dr. Klaus Engel, Mülheim an der Ruhr

Chairman of the Executive Board

- a) NATIONAL-BANK AG
- b) Borussia Dortmund Geschäftsführungs-GmbH

Christian Kullmann, Hamminkeln

Deputy Chairman of the Executive Board

(since May 6, 2016)

Chief Strategic Officer

- a) Borussia Dortmund GmbH & Co. KGaA
Evonik Performance Materials GmbH

Dr. Ralph Sven Kaufmann, Düsseldorf

Responsible for the Nutrition & Care, Resource Efficiency and Performance Materials segments

- a) Evonik Nutrition & Care GmbH (Chair)
Evonik Resource Efficiency GmbH (Chair)
Evonik Performance Materials GmbH (Chair)

Thomas Wessel, Herten

Chief Human Resources Officer

Responsible for Technology & Infrastructure

- a) Evonik Nutrition & Care GmbH
Evonik Resource Efficiency GmbH
Evonik Performance Materials GmbH
Evonik Technology & Infrastructure GmbH (Chair)
Pensionskasse Degussa VVaG
Vivawest GmbH
Vivawest Wohnen GmbH
- b) Gesellschaft zur Sicherung von
Bergmannswohnungen mbH

Ute Wolf, Düsseldorf

Chief Financial Officer

- a) Deutsche Asset Management Investment GmbH
Evonik Nutrition & Care GmbH
Evonik Resource Efficiency GmbH
Evonik Performance Materials GmbH
Pensionskasse Degussa VVaG

a) Membership of other statutory supervisory boards.

b) Membership of comparable German and foreign supervisory bodies of business enterprises pursuant to Section 125 Paragraph 1 Sentence 5 of the German Stock Corporation Act (AktG).

Market positions 2016

Market positions 2016^a

Product	Application	Global ranking ^a	Capacity in metric tons p. a.
Nutrition & Care			
Amphoteric surfactants	Shampoos, shower gels	1	^d
Ceramides, phytosphingosines	Cosmetics	1	^d
Oleochemical quaternary derivatives	Fabric softeners	1	^d
Organically modified silicones	Additives for polyurethane foams, cosmetics, radiation-cured separation coatings, super-spreading agents	1–2	^d
Superabsorbents	Diapers, feminine hygiene products, incontinence products, technical applications	2–3	570,000
Amino acids and amino acid derivatives	Pharmaceutical intermediates and infusion solutions	3	^d
Exclusive synthesis	Intermediates and active substances for pharmaceuticals and specialty applications	3	^d
Pharmaceutical polymers	Drug delivery systems (e.g. tablet coatings) and medical products (e.g. bioresorbable implants)	2	^d
DL-methionine	Animal nutrition	1	580,000
Resource Efficiency			
Hydrogen peroxide	Bleaching of pulp and textiles, oxidation agent for the chemical industry, starting product for polyurethane	2	> 900,000
Activated nickel catalysts	Life sciences and fine chemicals, industrial chemicals	3	^d
Precious metal powder catalysts	Life sciences and fine chemicals, industrial chemicals	1	^d
Oil and fat hydrogenation catalysts	Life sciences and fine chemicals, industrial chemicals	3	^d
Amorphous polyalphaolefins	Thermoplastic hot melt adhesives	1	^d
Polybutadienes	Automotive manufacturing (adhesives and sealants)	2	^d
Polyester resins	Can- and coil coating, reactive hot melt adhesives	1	^d
Thermoplastic and reactive methacrylate resins	Binders for paints and coatings	1–2	^d
Organically modified silicones	Binders for paints and printing inks	2	^d
Isophorone chemistry	Environment-friendly coating systems, high-performance composites (crosslinkers)	1	^d
PEEK	Special applications in the oil and gas, automotive and aviation industries, electronics/semiconductors, specialty medical technology (e.g. implants)	3	^d
Polyamide 12	High-performance specialty polymer applications (e.g. automotive, medical, sport, gas and offshore oil pipelines)	1	^d
Oil additives	Viscosity modifiers	1	^d
Organosilanes, chlorosilanes	Rubber, silicone rubber, paints and coatings, adhesives and sealants, building protection materials, pharmaceuticals, cosmetics, optical fibers	1 ^b	^d
Fumed silicas, fumed metal oxides, precipitated silicas, matting agents	Silicone rubber, paints and coatings, adhesives, sealants and plastics, pharmaceuticals, cosmetics, high-temperature insulation, electronics, reinforcement of rubber, consumer products, additives for the coatings and printing inks industry	1	600,000

Market positions 2016^a

Product	Application	Global ranking ^a	Capacity in metric tons p. a.
Performance Materials			
Butene-1	Co-monomer for polyolefins	1 ^c	235,000
DINP	High-molecular plasticizers for use in flexible PVC	2	220,000
Isononanol	Intermediate for high-molecular plasticizers	2	400,000
Cyanuric chloride	Industrial applications and specialties (e.g. crosslinkers and optical brighteners), crop protection (especially Chinese producers)	3	31,000
Alkoxides	Catalysts for biodiesel, pharmaceuticals, agrochemicals and other applications	1	>200,000
Methacrylate monomers	Dispersions, coatings, plastics, additives, adhesives, optical lenses	1–2	^d
Methacrylate polymers (PMMA molding compounds and PMMA semi-finished products)	Construction materials for the automotive and electrical/electronics industries, specialty medical technology, architecture, design and communication applications	1–2	400,000

^a Evonik's assessment based on various individual market reports/information and in-house market research.

^b Chlorosilanes: freely traded volumes. Overall assessment—market position differs depending on application.

^c Freely traded volumes.

^d No data available.

Alternative Performance Measures

For internal management purposes, we use alternative performance measures that are not defined by IFRS. The calculation of these measures and their development are outlined in

in the management report in addition to the IFRS performance measures. The most important alternative performance measures are also presented in the segment reporting.

Alternative performance measures used

	For definition and calculation see page
Adjusted EBITDA	53, 58, 170
Adjusted EBITDA margin	53, 170
Adjusted EBIT	53, 58, 170
Adjustments	53, 58
Adjusted net income	59
Adjusted earnings per share	59
Capital employed	53, 60, 170
Economic value added (EVA®)	60
Free cash flow	54, 73
Net financial assets/debt	71
ROCE	53, 60, 171

Glossary

Technical terms

3D printing

In 3D printing, three-dimensional objects are manufactured on the basis of a digital blueprint. The material is applied in layers on a base surface to create a geometric structure. Evonik is one of the world's leading producers of high-performance materials for 3D printing, and offers polymers and additives for a variety of 3D printing processes.

Accident frequency (occupational safety indicator)

Number of accidents involving Evonik employees and contractors' employees under Evonik's direct supervision per 1 million working hours.

Alkoxides

Evonik produces alkoxides, which are used as catalysts for efficient high-yield production of biodiesel. Using Evonik's catalysts, biodiesel can be manufactured in a water-free process. As a result, fewer unwanted by-products are generated, leading to less contamination, so they facilitate the production of biodiesel.

Amino acids

Amino acids are building blocks for proteins that are used in animal nutrition. They are used to ensure that the amino acid content of animal feed is optimally aligned to requirements. As a result, livestock needs less feed. That also reduces excretion of nitrogen and undigested nutrients, which improves the carbon footprint of livestock farming and reduces overfertilization of the soil. Evonik manufactures and markets all five major essential amino acids for animal nutrition, i.e. DL-methionine (MetAMINO®), L-lysine (Biolys®), L-threonine (ThreAMINO®), L-tryptophan (TrypAMINO®) and L-valine (ValAMINO®). Evonik also produces amino acids and their derivatives in pharmaceutical quality for use in infusion solutions for parenteral nutrition, as starting products for animal cell cultures, and in the manufacture of active ingredients.

C₄ chemistry

C₄ crack is a by-product of crude oil refining. It is mainly produced in a steam cracker when naphtha is split into ethylene and propylene. After isolation, Evonik processes the C₄ hydrocarbons and places them on the market, for example, as butadiene for tires and butene-1 for the plastics industry. Isobutene is processed into methyl tertiary butylether (MTBE), which is used as an anti-knock agent in fuel. In further processing steps, it manufactures high-chain alcohols and plasticizers for flexible PVC. Evonik's integrated C₄ technology platform ensures excellent product yields. All hydrocarbons contained in C₄ crack are processed cost-effectively.

Carbon Disclosure Project (CDP)

The Carbon Disclosure Project (CDP) is a non-profit organization and is currently the world's largest and most important initiative by the financial sector on climate change. It is currently supported by more than 800 institutional investors with total assets under management of over US\$ 100 trillion. Companies report data and information on CO₂ emissions, climate risks and reduction targets and strategies to the CDP on a voluntary basis once a year. Investors use the data to derive a climate risk profile for companies, which they then use in their investment decisions.

Composites

Composites are composed of at least two different materials, for example a matrix material reinforced with fibers. By combining the properties of the materials carefully, it is possible to produce components that are very light yet extremely tough.

Diversity

Evonik defines diversity as a balanced employee structure, not just in terms of gender, but also in relation to specialist areas, experience of different organizational units and functional areas, a broad age range and various nationalities, in other words, diversity across the board.

Greenhouse Gas Protocol (GHG Protocol)

The Greenhouse Gas Protocol is the most widespread voluntary international standard for calculating and compiling data on greenhouse gas emissions from industry. It was developed by the World Business Council for Sustainable Development and the World Resources Institute.

High-performance polymers

Evonik is a specialist for high-performance polymers. These have particularly high strength, making them a welcome alternative to metals in many fields, for example, in light-weight structures, medical implants and industrial applications. Depending on where they are used, such materials have to withstand high temperatures, aggressive chemicals and significant mechanical strain.

Hydrogen peroxide

Hydrogen is one of the cleanest and most versatile chemicals. Because of its positive properties it is used in a wide range of applications, from environment-friendly bleaching agents in the pulp and textile industry to etching agents in the electronic industry, active pharmaceutical ingredients and cosmetic applications, sterilization and disinfection agents in food processing as well as oxidizing agents in chemical and pharmaceutical syntheses. It is also used in the innovative hydrogen peroxide-to-propylene oxide (HPPO) process developed by Evonik and ThyssenKrupp Industrial Solutions for the direct chemical synthesis of propylene oxide, an important precursor for polyurethanes, and, for example, in the production of caprolactam.

Incident frequency (plant safety indicator)

This indicator is based on the process safety performance indicator defined by the European Chemical Industry Council (Cefic). Analogously to the accident frequency indicator for occupational safety, it covers incidents involving the release of substances, fire or explosion, even if there is little or no damage. It is calculated from the number of incidents per 1 million working hours.

Integrated technology platforms

Integrated technology platforms allow efficient use of product streams and thus high added value by utilizing by-products from one production process as starting products for others. That saves resources, reduces CO₂ emissions and leverages cost-efficiency. Examples of integrated technology platforms in the Evonik Group are isophorone and silicon.

Isophorone/isophorone diamine/isophorone diisocyanate

Isophorone is used as a solvent, for example in the paints and coatings industry. It is also used to produce the derivatives isophorone diamine and isophorone diisocyanate. Isophorone diamine is an important curing agent for epoxy resin systems, for example to strengthen rotor blades. Isophorone diisocyanate is used to produce light- and weather-resistant polyurethanes, for example, for coating instrument panels and other plastic components.

Monomers

Monomers are low-molecular-weight, reactive molecules that can build polymers.

Oil additives

As a leading global supplier of oil additives, Evonik develops innovative technologies that improve the operative efficiency of engines, gears and hydraulic systems. Specific and customized improvements in the flow properties of lubricants over a wide temperature range play an important role. Depending on the application, Evonik markets these technologies as DRIVONTM, NUFLUXTM and DYNAVIS[®].

PEEK

Polyether ether ketones (PEEK) are partially crystalline high-performance polymers. In view of their exceptionally high mechanical, thermal and chemical properties, they are mainly used in functional components and assemblies in automotive engineering, aviation, electronics and medical products.

PMMA

Abbreviation for polymethylmethacrylate. This is a colorless polymer (acrylic glass) that can be colored in a range of shades. Properties: high light transmittance, good moldability, exceptionally high weather resistance. Applications: automotive and aviation engineering, architecture, lighting, design, electronics and communications technology. Best-known brand: PLEXIGLAS[®], which is marketed as ACRYLITE[®] in the Americas. Form supplied: thermoplastic molding compounds, cast or extruded semi-finished goods (sheet, film, tubes, rods).

Polyimides

Polyimides are mainly used in filter bags for high-temperature filtration in coal-fired power plants and waste incinerators, and in highly selective membranes for efficient gas separation.

Polymers

Long-chain, short-chain or crosslinked molecules (macromolecules) produced by linking smaller molecules (monomers).

Probiotics

Probiotics are live bacteria that occur naturally in the intestinal tract. They provide a valuable service for humans and animals: Good bacteria aid digestion, stimulate the metabolism, prevent the growth of pathogens, and strengthen the immune system.

REACH

REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) is the European chemicals regulation.

Responsible Care®

Responsible Care® is the chemical industry's global initiative for a continuous improvement in health, safety and environmental performance. As well as observing statutory and other regulations, the industry cooperates with government agencies and advocacy groups on a wide range of voluntary initiatives.

Silanes

Silanes are a group of chemical compounds, consisting of a silicon-based structure and up to four functional groups.

- Organofunctional silanes have at least one functional hydrocarbon group and possibly another functional group. They are used in high-performance additives that improve the properties of inorganic particles, resins and polymers. For example, they enhance the bonding properties of adhesives, make plastics heat-resistant, and add flame-retardant properties to cables.
- Sulfur-functional silanes have revolutionized the production of tires, where they are used in combination with silica to improve key properties such as rolling resistance and wet grip.
- Chlorosilanes are key resources for the semiconductor and optical fiber industry.

Silica

Evonik manufactures both precipitated silica using a wet route and fumed silica which is produced by a flame process. Silica is also known as silicon dioxide. These ultra-fine particles are used in a wide range of applications, including the life sciences (pharmaceuticals and cosmetics), construction, adhesives and sealants, paints and coatings, furniture manufacture, electronics applications such as polishing computer chips and the production of toners for digital printing. They also play a key role in energy-saving tires with low rolling resistance ("green" tires).

Silica/silane system

Silica is used in combination with silanes to reinforce the tread of modern tires. The silica/silane system greatly reduces rolling resistance, resulting in fuel savings of up to 8 percent compared with conventional auto tires. It also improves grip on wet and wintry roads.

Structural foams

Structural foams are popular for lightweight construction because they are light and stable. ROHACELL® is the brand name for Evonik's polymethacrylimide (PMI) structural foams, which have been used for many years in planes and helicopters. Now they are increasingly being used in sandwich structures in the automotive industry.

Superabsorbents

Crosslinked polymers that are insoluble in water and can absorb and store large quantities of aqueous liquid through a mechanism that causes them to swell and form hydro gels. The liquid is not released even under pressure. Consequently, these polymers are mainly used in diapers. Special forms of superabsorbents are used in agriculture to regulate the moisture in soil. They can absorb large quantities of water, and release it to the plants during dry periods.

UN Global Compact

The United Nations Global Compact is a strategic initiative for companies that undertake to align their business operations and strategies with ten universally recognized principles relating to human rights, labor, environmental protection and fighting corruption. Companies that join the Global Compact give an undertaking that they will report annually on their progress.

Vision 2050

The Vision 2050 of the World Business Council for Sustainable Development describes the pathway to achieving a sustainable world with around 9 billion people living well within the limits of the planet by 2050. Companies play a key role in this.

World-scale facility

A large-scale production facility. World-scale facilities are often more economical because fixed costs per metric ton decline as output increases.

Financial and economic terms

Adjusted EBIT

Earnings before financial result and taxes, after adjustments. Earnings indicator showing Evonik's operating earnings performance irrespective of the structure of its assets.

Adjusted EBITDA

Earnings before financial result, taxes, depreciation and amortization, after adjustments. Earnings indicator showing Evonik's operating earnings performance irrespective of the structure of its assets and its investment profile. This is a cash flow-related indicator which is used in particular in the adjusted EBITDA margin to show the relationship to sales as a basis for comparison with competitors.

Adjustments

Evonik refers to the special items that are factored out when calculating the operational performance indicators adjusted EBITDA and adjusted EBIT as adjustments. They include restructuring, impairment losses/reversals of impairment losses, income and expenses in connection with the purchase/disposal of investments in companies, and other income and expense items that, due to their nature or amount, do not reflect the typical operating business.

Compliance

Compliance refers to all activities to ensure that the conduct of the company, its governance bodies and its employees respect all applicable mandatory standards such as legal provisions, statutory provisions and prohibitions, in-house directives and voluntary undertakings entered into by Evonik. The basis for this understanding and the observance of these binding standards is set out in Evonik's Code of Conduct.

Corporate governance

Corporate governance comprises all principles underlying the management and oversight of a company. As an expression of good and responsible management of the company, it is therefore a central element in a company's management philosophy. The principles of corporate governance relate mainly to collaboration within the Executive Board and Supervisory Board and between these two boards and the shareholders, especially at Shareholders' Meetings. They also relate to the company's relationship with other people and organizations with which it has business dealings.

CTA

Abbreviation for contractual trust arrangement. This is a model used by Evonik to transfer some of its pension obligations to a trust established especially for this purpose: Evonik Pensionstreuhand e. V., Essen (Germany). The assets transferred to this trust secure employees' pensions.

EVA®

Abbreviation for economic value added. Indicator used for value-oriented management of the Evonik Group. EVA® is calculated from the difference between adjusted EBIT and the cost of capital employed. If EVA® is positive, value is created.

Free cash flow

The free cash flow is a measure of the company's internal financing capacity. It shows the cash that is available to pay dividends, make acquisitions and repay borrowing. The free cash flow is calculated from the cash flow from operating activities, continuing operations, less outflows for capital expenditures on intangible assets, property, plant and equipment.

Hedge accounting

This refers to accounting for hedging transactions and the associated hedged items as a single valuation unit. The purpose of hedge accounting is to synchronize the otherwise different periods in which the hedged item and hedge impact on earnings.

Hedging

Hedging is the strategy used to offset the exposure of business transactions to risks such as changes in exchange rates, interest rates and raw material prices. The company enters into an additional transaction whose profile is exactly opposite to the profile of the hedge transaction. Derivative financial instruments such as forward contracts, swaps and options are used as hedging instruments.

IFRS

Abbreviation for International Financial Reporting Standards. Since 2005 companies listed on stock exchanges in the European Union have been required to prepare consolidated financial statements in accordance with IFRS.

Rating

In the financial community, a rating is an assessment of the creditworthiness of a debtor. Ratings are generally awarded by specialized rating agencies. The probability of default is calculated on the basis of specific criteria and debtors are assigned to rating classes that are indicated by rating codes. Ratings are also awarded for corporate and government bonds. A rating indirectly affects the debtor's business activity. Normally a better rating enables a debtor to obtain favorable terms for borrowing.

ROCE

The return on capital employed is a measure of the profitability of capital employed. It is calculated by dividing adjusted EBIT by the average capital employed in the reporting period.

Stakeholders

In a corporate context, the term stakeholders refers to all natural or legal persons with an interest in the development of an enterprise. Stakeholders range from owners and employees through customers and suppliers to the state, lenders and general public.

Swaps (currency swaps, interest rate swaps)

Derivative financial instruments used to hedge currency or interest rate risks by swapping cash flows. Currency swaps entail swapping payments in different currencies, while interest swaps comprise swapping fixed interest rates for variable rates.

Venture capital

Venture capital is risk capital that is made available to fund innovative concepts and ideas, generally at high-growth small and mid-sized enterprises. Through Evonik Venture Capital GmbH, Evonik aims to invest up to €100 million in promising start-ups and leading specialized venture capital in the mid term. The regional focus is Europe, the USA and Asia.

Volatility

Volatility is a measure of the fluctuation in the price of traded goods, e.g. shares, currencies, interest rates, in a given period. It expresses the standard deviation of relative changes in prices over a given period (e.g. a year). The term is often used to denote the fluctuation in prices or interest rates on entire markets.