

Hyosung Chemical Corporation and Subsidiaries

**Consolidated Financial Statements
December 31, 2022 and 2021**

Hyosung Chemical Corporation and Subsidiaries

Index

December 31, 2022 and 2021

	Page(s)
Independent Auditor’s Report	1-4
Consolidated Financial Statements	
Consolidated Statements of Financial Position.....	5
Consolidated Statements of Profit or Loss.....	6
Consolidated Statements of Comprehensive Income.....	7
Consolidated Statements of Changes in Equity.....	8
Consolidated Statements of Cash Flows.....	9
Notes to the Consolidated Financial Statements.....	10-87



Independent Auditor's Report

(English Translation of a Report Originally Issued in Korean)

To the Board of Directors of and Shareholders of
Hyosung Chemical Corporation

Opinion

We have audited the accompanying consolidated financial statements of Hyosung Chemical Corporation and its subsidiaries (collectively referred to as the "Group") which comprise the consolidated statements of financial position as at December 31, 2022 and 2021, and the consolidated statements of profit or loss, consolidated statements of comprehensive income, consolidated statements of changes in equity and consolidated statements of cash flows for the years then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of Hyosung Chemical Corporation and its subsidiaries as at December 31, 2022 and 2021, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS).

Basis for Opinion

We conducted our audits in accordance with Korean Standards on Auditing. Our responsibilities under those 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 in accordance with the ethical requirements of the Republic of Korea that are relevant to our audit of the consolidated financial statements and we have fulfilled our other ethical responsibilities in accordance with the ethical requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter

Without modifying our opinion, we draw attention to Note 3 to the consolidated financial statements of the Group. Note 3 to the consolidated financial statements describes uncertainty relating to the impact of Coronavirus disease 2019 (COVID-19) on the Group's productivity and ability to satisfy customer's orders, and to solve these events or circumstances.

Key Audit Matter

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

(1) Impairment assessment on cash-generating units

Why we determined this matter as Key Audit Matter

A cash generating unit (CGU) is tested for impairment if there is an indication of impairment. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use.

The Group determined that there is an indication of asset impairment in CGU of POK(POLYKETONE) segment and Hyosung Vina Chemicals. We focused on this area due to the significant size of this CGU and because the assessment of the 'value in use' of the Group's CGU involves management's judgements about the expectations for future business and on the discount rates. The Group engaged an independent external expert to assist the Group in valuation of the fair value of the POK(POLYKETONE) segment and Hyosung Vina Chemicals' CGU.

How our audit addressed the Key Audit Matter

We have performed audit procedures in relation to the impairment assessment on the CGU are as follows:

- We evaluated the appropriateness of determination of the CGU of the Group and the book amount of the CGU.
- We evaluated the independence and eligibility of the external expert hired by the Group to assess the value in use.
- We evaluated the adequacy of the valuation model used in estimating value in use.
- We confirmed the consistency of the cash flow forecasts and the approved forecasts by management.
- We compared current year actual results with the prior year forecast.
- We evaluated the reasonableness of key assumptions used in estimating value in use.
- We examined the accuracy of value in use calculations.

Other Matter

Auditing standards and their application in practice vary among countries. The procedures and practices used in the Republic of Korea to audit such consolidated financial statements may differ from those generally accepted and applied in other countries.

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

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with Korean IFRS, and 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.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

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

Our objectives are 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 opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Korean Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with Korean Standards on Auditing, 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 entity'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, if such disclosures are inadequate, to modify our 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 achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an 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 regarding, 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 where applicable, 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 auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partner on the audit resulting in this independent auditor's report is Youngseok Bae, Certified Public Accountant.

Seoul, Korea

March 8, 2023

This report is effective as of March 8, 2023, the audit report date. Certain subsequent events or circumstances, which may occur between the audit report date and the time of reading this report, could have a material impact on the accompanying consolidated financial statements and notes thereto. Accordingly, the readers of the audit report should understand that there is a possibility that the above audit report may have to be revised to reflect the impact of such subsequent events or circumstances, if any.

Hyosung Chemical Corporation and Subsidiaries
Consolidated Statements of Financial Position
December 31, 2022 and 2021

<i>(in Korean won)</i>	Notes	2022	2021
Assets			
Current assets			
Cash and cash equivalents	4,8,9	₩ 106,319,341,602	₩ 34,797,251,561
Trade and other receivables	4,7,8,11	333,403,154,418	327,974,480,633
Other financial assets	4,5,8,12	1,511,389,948	756,420,271
Other current assets	13	25,380,564,254	33,081,937,710
Other intangible assets	17	-	7,343,879
Inventories	14	353,082,999,512	392,367,988,119
Current tax assets		226,994,870	-
		<u>819,924,444,604</u>	<u>788,985,422,173</u>
Non-current assets			
Long-term trade and other receivables	4,8,11	3,716,400,215	3,408,717,260
Property, plant and equipment	15,16,18,38	2,187,082,744,532	2,184,604,308,717
Intangible assets	17	32,207,264,388	33,970,502,392
Investments in associates	19	14,570,030,485	16,188,675,846
Other non-current financial assets	4,5,8,10,12	2,583,926,693	1,042,817,499
Other non-current assets	13,23	30,587,043,520	5,217,087,277
Deferred tax assets	24	40,447,044,606	10,631,926,966
		<u>2,311,194,454,439</u>	<u>2,255,064,035,957</u>
Total assets		<u>₩ 3,131,118,899,043</u>	<u>₩ 3,044,049,458,130</u>
Liabilities			
Current liabilities			
Trade and other payables	4,8,21	₩ 406,595,298,791	₩ 438,810,249,618
Borrowings	4,7,8,22,38	1,281,879,272,380	582,591,694,757
Other financial liabilities	8,12,16	12,936,807,875	4,250,708,286
Current tax liabilities	24	-	39,421,732,107
Other current liabilities	25,39	14,337,304,106	18,089,532,599
		<u>1,715,748,683,152</u>	<u>1,083,163,917,367</u>
Non-current liabilities			
Long-term trade and other payables	4,8,21	13,594,408,420	13,269,714,535
Long-term borrowings	4,8,22,38	1,254,294,560,587	1,437,382,100,580
Deferred tax liabilities		53,508,622	-
Other non-current financial liabilities	8,12,16	21,551,062,947	7,637,639,449
Other non-current liabilities	25	11,259,590,694	13,295,302,650
		<u>1,300,753,131,270</u>	<u>1,471,584,757,214</u>
Total liabilities		<u>3,016,501,814,422</u>	<u>2,554,748,674,581</u>
Equity			
Share capital	26	15,950,630,000	15,950,630,000
Share premium		327,697,938,702	327,697,938,702
Retained earnings (Accumulated deficit)	27	(271,423,670,251)	126,224,730,124
Other components of equity	28	42,392,186,170	19,427,484,723
Equity attributable to owners of the Parent Company		<u>114,617,084,621</u>	<u>489,300,783,549</u>
Non-controlling interest		-	-
Total equity		<u>114,617,084,621</u>	<u>489,300,783,549</u>
Total liabilities and equity		<u>₩ 3,131,118,899,043</u>	<u>₩ 3,044,049,458,130</u>

The above consolidated statements of financial position should be read in conjunction with the accompanying notes.

Hyosung Chemical Corporation and Subsidiaries
Consolidated Statements of Profit or Loss
Years Ended December 31, 2022 and 2021

<i>(in Korean won)</i>	Notes	2022	2021
Revenue	6,20,29	₩ 2,878,558,180,595	₩ 2,519,965,285,042
Cost of sales	20,30,31	<u>3,108,714,473,886</u>	<u>2,282,689,201,203</u>
Gross profit (loss)		(230,156,293,291)	237,276,083,839
Selling, general and administrative expenses	30,31,32	85,688,260,701	78,919,257,707
Research and development expenses	30,31	<u>20,882,685,874</u>	<u>21,782,796,209</u>
Operating profit (loss)		(336,727,239,866)	136,574,029,923
Other income	33	6,420,710,991	7,430,881,227
Other expenses	33	5,519,680,504	3,066,998,233
Finance income	34	129,527,941,136	31,025,551,826
Finance expenses	34	240,262,496,940	69,917,154,387
Share of net profit (loss) of associates accounted for using the equity method		<u>(1,690,126,238)</u>	<u>325,813,059</u>
Profit (loss) before income tax		(448,250,891,421)	102,372,123,415
Income tax expense(benefit)	24	<u>(39,384,110,869)</u>	<u>43,956,293,060</u>
Profit (loss) for the year		<u>₩ (408,866,780,552)</u>	<u>₩ 58,415,830,355</u>
Profit (loss) is attributable to:			
Owners of the Parent Company		₩ (408,866,780,552)	₩ 58,415,830,355
Non-controlling interests		<u>-</u>	<u>-</u>
		<u>₩ (408,866,780,552)</u>	<u>₩ 58,415,830,355</u>
Earnings (loss) per share attributable to the equity holders of the Parent Company			
Basic earnings (loss) per share	35	₩ (128,664)	₩ 18,383

The above consolidated statements of profit or loss should be read in conjunction with the accompanying notes.

Hyosung Chemical Corporation and Subsidiaries
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2022 and 2021

<i>(in Korean won)</i>	Notes	2022	2021
Profit (loss) for the year		<u>₩ (408,866,780,552)</u>	<u>₩ 58,415,830,355</u>
Other comprehensive income (loss)			
<i>Items that will not be reclassified to profit or loss</i>			
Remeasurements of net defined benefit liabilities	23,24	9,831,741,338	113,111,724
Share of remeasurements of net defined benefit liabilities of associates	19	104,576,738	143,655,690
Gain on valuation of financial assets at fair value through other comprehensive income	12	(20,313,293)	11,642,880
<i>Items that may be subsequently reclassified to profit or loss</i>			
Share of other comprehensive income (loss) of associates		(33,095,861)	294,895,697
Overseas operations translation gain		<u>24,300,172,702</u>	<u>27,968,517,753</u>
Other comprehensive income for the year, net of tax		<u>34,183,081,624</u>	<u>28,531,823,744</u>
Total comprehensive income (loss) for the year		<u>₩ (374,683,698,928)</u>	<u>₩ 86,947,654,099</u>
Total comprehensive income (loss) for the year is attributable to:			
Owners of the Parent Company		₩ (374,683,698,928)	₩ 86,947,654,099
Non-controlling interest		-	-
		<u>₩ (374,683,698,928)</u>	<u>₩ 86,947,654,099</u>

The above consolidated statements of comprehensive income should be read in conjunction with the accompanying notes.

Hyosung Chemical Corporation and Subsidiaries
Consolidated Statements of Changes in Equity
Years Ended December 31, 2022 and 2021

(in Korean won)

	Attributable to owners of the Parent Company						Non-controlling Interest	Total Equity
	Share capital	Share premium	Retained Earnings (Accumulated deficit)	Other Components of Equity	Total			
Balance at January 1, 2021	₩ 15,950,630,000	₩ 327,697,938,702	₩ 67,606,964,768	₩ (8,902,404,020)	₩ 402,353,129,450	₩ -	₩ 402,353,129,450	
Total comprehensive income								
Profit for the year	-	-	58,415,830,355	-	58,415,830,355	-	58,415,830,355	
Remeasurements of net defined benefit liabilities	-	-	113,111,724	-	113,111,724	-	113,111,724	
Share of remeasurements of net defined benefit liabilities of associates	-	-	143,655,690	-	143,655,690	-	143,655,690	
Gain on valuation of financial assets at fair value through other comprehensive income	-	-	-	11,642,880	11,642,880	-	11,642,880	
Share of other comprehensive income (loss) of associates	-	-	(54,832,413)	349,728,110	294,895,697	-	294,895,697	
Overseas operations translation gain	-	-	-	27,968,517,753	27,968,517,753	-	27,968,517,753	
Balance at December 31, 2021	<u>₩ 15,950,630,000</u>	<u>₩ 327,697,938,702</u>	<u>₩ 126,224,730,124</u>	<u>₩ 19,427,484,723</u>	<u>₩ 489,300,783,549</u>	<u>₩ -</u>	<u>₩ 489,300,783,549</u>	
Balance at January 1, 2022	₩ 15,950,630,000	₩ 327,697,938,702	₩ 126,224,730,124	₩ 19,427,484,723	₩ 489,300,783,549	₩ -	₩ 489,300,783,549	
Total comprehensive income								
Loss for the year	-	-	(408,866,780,552)	-	(408,866,780,552)	-	(408,866,780,552)	
Remeasurements of net defined benefit liabilities	-	-	9,831,741,338	-	9,831,741,338	-	9,831,741,338	
Share of remeasurements of net defined benefit liabilities of associates	-	-	104,576,738	-	104,576,738	-	104,576,738	
Loss on valuation of financial assets at fair value through other comprehensive income	-	-	-	(20,313,293)	(20,313,293)	-	(20,313,293)	
Share of other comprehensive income (loss) of associates	-	-	1,282,062,101	(1,315,157,962)	(33,095,861)	-	(33,095,861)	
Overseas operations translation gain	-	-	-	24,300,172,702	24,300,172,702	-	24,300,172,702	
Balance at December 31, 2022	<u>₩ 15,950,630,000</u>	<u>₩ 327,697,938,702</u>	<u>₩ (271,423,670,251)</u>	<u>₩ 42,392,186,170</u>	<u>₩ 114,617,084,621</u>	<u>₩ -</u>	<u>₩ 114,617,084,621</u>	

The above consolidated statements of changes in equity should be read in conjunction with the accompanying notes.

Hyosung Chemical Corporation and Subsidiaries
Consolidated Statements of Cash Flows
Years Ended December 31, 2022 and 2021

<i>(in Korean won)</i>	Note	2022	2021
Cash flows from operating activities			
Cash generated from (used in) operations	37 ₩	(84,366,486)	₩ 124,163,508,044
Income taxes paid		(33,429,777,210)	(21,544,778,118)
Interest paid		(102,569,219,951)	(34,393,704,208)
Interest received		1,319,404,280	149,260,016
Dividends received		-	291,355,000
Net cash inflow (outflow) from operating activities		<u>(134,763,959,367)</u>	<u>68,665,640,734</u>
Cash flows from investing activities			
Decrease in short-term guarantees		236,888,200	1,000,000,000
Collection of long-term loans		337,710,000	243,642,518
Decrease in long-term guarantees		6,742,830	253,704,104
Proceeds from disposal of short-term financial instruments		-	54,917,189,313
Increase (decrease) in derivatives		20,735,843,390	(701,107,006)
Proceeds from disposal of property, plant and equipment		2,630,949,674	295,745,770
Proceeds from disposal of intangible assets		-	1,200,000,000
Receipt of government grants		3,467,034,851	346,468,089
Increase in short-term guarantees		(408,344,172)	(311,055,766)
Increase in long-term loans		(752,950,000)	(340,000,000)
Increase in long-term guarantees		(40,028,350)	(67,901,844)
Increase in prepaid expenses		(11,330,118,243)	(22,497,538,129)
Payments for property, plant and equipment		(243,841,511,739)	(328,270,453,977)
Payments for intangible assets		(277,628,471)	(13,405,907,799)
Payments for financial assets at fair value through profit or loss		(1,610,985,920)	-
Proceeds from disposal of financial assets at fair value through profit or loss		136,950,000	-
Payments for financial assets at fair value through other comprehensive income		-	(103,158,000)
Net cash outflow from investing activities		<u>(230,709,447,950)</u>	<u>(307,440,372,727)</u>
Cash flows from financing activities			
Proceeds from short-term borrowings		2,278,301,793,482	1,411,384,020,028
Proceeds from long-term borrowings		250,533,136,353	282,864,728,900
Proceeds from issuance of bonds		169,673,740,000	20,867,968
Repayments of short-term borrowings		(1,991,186,845,796)	(1,274,041,282,004)
Repayments of long-term borrowings		(63,815,853,345)	(12,500,000,000)
Repayments of bonds		(195,000,000,000)	(98,000,000,000)
Repayments of current portion of borrowings		(27,999,970,000)	(43,614,540,000)
Repayments of lease liabilities		(3,783,033,687)	(3,428,140,924)
Net cash inflow from financing activities		<u>416,722,967,007</u>	<u>262,685,653,968</u>
Effects of exchange rate changes on cash and cash equivalents		<u>20,272,530,351</u>	<u>704,952,095</u>
Net increase in cash and cash equivalents		71,522,090,041	24,615,874,070
Cash and cash equivalents at the beginning of the year		34,797,251,561	10,181,377,491
Cash and cash equivalents at the end of the year		<u>₩ 106,319,341,602</u>	<u>₩ 34,797,251,561</u>

The above consolidated statements of cash flows should be read in conjunction with the accompanying notes.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

1. General Information

Hyosung Chemical Corporation (the “Company”) and its subsidiary (collectively referred to as the “Group”) was spun off on June 1, 2018, from Hyosung Corporation to engage in chemical related business.

As at December 31, 2022, the Company has plants in Yongyeon, Gumi, Oksan and Daejeon, etc. In addition, the Company has a subsidiary in Vietnam and China.

As at December 31, 2022, the Group’s major shareholders are as follows:

	Number of shares	Percentage of ownership (%)
Hyosung Corporation	643,481	20.17
Seok-Rae Cho	231,927	7.27
Hyun-Joon Cho	279,355	8.76
Hyun-Sang Cho	233,663	7.32
Gwang-Ja Song	23,445	0.73
Yang-Rae Cho, etc.	11,367	0.36
Others	1,754,557	55
Treasury shares	12,331	0.39
	3,190,126	100.00

1.1 Consolidated Subsidiary

Details of the consolidated subsidiary as at December 31, 2022 and 2021, are as follows:

	Location	Ownership interest held by the Group (%)		Closing month	Main business
		2022	2021		
Hyosung Vina Chemicals Co., Ltd.	Vietnam	100	100	December	Manufacturing PP/DH
Hyosung Film(Quzhou) Co., Ltd. ¹	China	100	-	December	Manufacturing Nylon film

¹ The Group contributed ₩ 23,764 million (USD 20 million) to Hyosung Film (Quzhou) Co., Ltd., 100% owned subsidiary which was newly established on January 14, 2022 and made an additional investment of ₩ 25,632 million (USD 20 million) on May 17, 2022.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

1.2 Summarized Financial Information of Consolidated Subsidiary

Summarized financial information of consolidated subsidiary as at and for the years ended December 31, 2022 and 2021, is as follows:

(in millions of
Korean won)

Subsidiary	2022					
	Assets	Liabilities	Equity	Sales	Profit (Loss) for the year	Total comprehensive profit (loss)
Hyosung Vina Chemicals Co., Ltd.	₩ 1,773,495	₩ 1,779,354	₩ (5,859)	₩ 592,546	₩ (313,721)	₩ (287,755)
Hyosung Film(Quzhou) Co., Ltd.	57,750	8,224	49,526	-	1,955	130

(in millions of
Korean won)

Subsidiary	2021					
	Assets	Liabilities	Equity	Sales	Loss for the year	Total comprehensive loss
Hyosung Vina Chemicals Co., Ltd.	₩ 1,832,542	₩ 1,550,802	₩ 281,740	₩ 412,023	₩ (72,502)	₩ (44,378)

2. Significant Accounting Policies

The principal accounting policies applied in the preparation of these consolidated financial statements are set out below. These policies have been consistently applied to all the years presented, unless otherwise stated.

2.1 Basis of Preparation

The Group maintains its accounting records in Korean won and prepares statutory financial statements in the Korean language (Hangul) in accordance with International Financial Reporting Standards as adopted by the Republic of Korea (Korean IFRS). The accompanying consolidated financial statements have been condensed, restructured and translated into English from the Korean language financial statements.

Certain information attached to the Korean language financial statements, but not required for a fair presentation of the Group's financial position, financial performance or cash flows, is not presented in the accompanying consolidated financial statements.

The consolidated financial statements of the Group have been prepared in accordance with Korean IFRS. These are the standards, subsequent amendments and related interpretations issued by the International Accounting Standards Board (IASB) that have been adopted by the Republic of Korea.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

The consolidated financial statements have been prepared on a historical cost basis, except for the following:

- Certain financial assets and liabilities (including derivative instruments), certain classes of property, plant and equipment and investment property – measured at fair value
- defined benefit pension plans – plan assets measured at fair value

The preparation of consolidated financial statements requires the use of critical accounting estimates. Management also needs to exercise judgement in applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 3.

2.2 Changes in Accounting Policies and Disclosures

2.2.1 New and amended standards adopted by the Group

The Group has applied the following standards and amendments for the first time for their annual reporting period commencing January 1, 2022.

(a) Amendments to Korean IFRS 1116 Leases - Covid-19 - Related Rent Concessions beyond June 30, 2021

The application of the practical expedient, a lessee may elect not to assess whether a rent concession occurring as a direct consequence of the COVID-19 pandemic is a lease modification, is extended to lease payments originally due on or before June 30, 2022. A lessee shall apply the practical expedient consistently to eligible contracts with similar characteristics and in similar circumstances. The amendment does not have a significant impact on the financial statements.

(b) Amendments to Korean IFRS 1103 Business Combination – Reference to the Conceptual Framework

The amendments update a reference of definition of assets and liabilities to be recognized in a business combination in revised Conceptual Framework for Financial Reporting. However, the amendments add an exception for the recognition of liabilities and contingent liabilities within the scope of Korea IFRS 1037 *Provisions, Contingent Liabilities and Contingent Assets*, and Korean IFRS 2121 *Levies*. The amendments also clarify that contingent assets should not be recognized at the acquisition date. The amendment does not have a significant impact on the financial statements.

(c) Amendments to Korean IFRS 1016 Property, Plant and Equipment - Proceeds before intended use

The amendments prohibit an entity from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while the entity is preparing the asset for its intended use. Instead, the entity will recognize the proceeds from selling such items, and the costs of producing those items, in profit or loss.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

In accordance with the transitional provisions of the amendments to Korean IFRS 1016 *Property, Plant and Equipment - Proceeds before intended use*, the Group has applied the amendments retrospectively, but only to items of property, plant and equipment that are bought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after January 1, 2021. The Group recognized the cumulative effect of initially applying the amendments as an adjustment to the opening balance of retained earnings on January 1, 2021, and the comparative financial statements have been restated. The impact of the amendments is described in Note 40.

(d) Amendments to Korean IFRS 1037 Provisions, Contingent Liabilities and Contingent Assets - Onerous Contracts : Cost of Fulfilling a Contract

The amendments clarify that the direct costs of fulfilling a contract include both the incremental costs of fulfilling the contract and an allocation of other costs directly related to fulfilling contracts when assessing whether the contract is onerous. The amendment does not have a significant impact on the financial statements.

(e) Annual improvements to Korean IFRS 2018-2020

Annual improvements of Korean IFRS 2018-2020 Cycle should be applied for annual periods beginning on or after January 1, 2022, and earlier application is permitted. The amendment does not have a significant impact on the financial statements.

- Korean IFRS 1101 *First time Adoption of Korean International Financial Reporting Standards* – Subsidiaries that are first-time adopters
- Korean IFRS 1109 *Financial Instruments* – Fees related to the 10% test for derecognition of financial liabilities
- Korean IFRS 1041 *Agriculture* – Measuring fair value

2.2.2 New standards and interpretations not yet adopted by the Group

The following new accounting standards and interpretations have been published that are not mandatory for December 31, 2022 reporting periods and have not been early adopted by the Group.

(a) Amendments to Korean IFRS 1001 Presentation of Financial Statements - Classification of Liabilities as Current or Non-current

The amendments clarify that liabilities are classified as either current or non-current, depending on the substantive rights that exist at the end of the reporting period. Classification is unaffected by the likelihood that an entity will exercise right to defer settlement of the liability or the expectations of management. Also, the settlement of liability includes the transfer of the entity's own equity instruments, however, it would be excluded if an option to settle them by the entity's own equity instruments if compound financial instruments is met the definition of equity instruments and recognized separately from the liability. The amendments should be applied for annual periods beginning on or after January 1, 2024, and earlier application is permitted. The Group is in review for

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

the impact of these amendments on the financial statements.

(b) Korean IFRS 1001 Presentation of Financial Statements - Disclosure of Accounting Policies

The amendments to Korean IFRS 1001 define and require entities to disclose their material accounting policies. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group is in review for the impact of these amendments on the financial statements.

(c) Korean IFRS 1008 Accounting policies, changes in accounting estimates and errors - Definition of Accounting Estimates

The amendments define accounting estimates and clarify how to distinguish them from changes in accounting policies. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the financial statements.

(d) Korean IFRS 1012 Income Taxes - Deferred Tax related to Assets and Liabilities arising from a Single Transaction

The amendments include an additional condition to the exemption to initial recognition of an asset or liability that a transaction does not give rise to equal taxable and deductible temporary differences at the time of the transaction. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the financial statements.

(e) New Standard: Korean IFRS 1117 Insurance Contract

Korean IFRS 1117 *Insurance Contracts* replaces Korean IFRS 1104 *Insurance Contracts*. This Standard estimates future cash flows of an insurance contract and measures insurance liabilities using discount rates applied with assumptions and risks at the measurement date. The entity recognizes insurance revenue on an accrual basis including services (insurance coverage) provided to the policyholder by each annual period. In addition, investment components (Refunds due to termination/maturity) repaid to a policyholder even if an insured event does not occur, are excluded from insurance revenue, and insurance financial income or expense and the investment income or expense are presented separately to enable users of the information to understand the sources of income or expenses. This Standard should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted for entities that applied Korean IFRS 1109 Financial Instruments. The Group does not expect that these amendments have a significant impact on the financial statements.

Further amendments made in December 2022 added a transition option that permits an entity to apply an optional classification overlay in the comparative period(s) presented on initial application of Korean IFRS 1117. The classification overlay applies to all financial assets, including those held in respect of activities not connected to contracts within the scope of Korean IFRS 1117. It allows those assets to be classified in the comparative period(s) in a way that aligns with how the entity expects those assets to be classified on initial application of Korean IFRS 1109. The classification can be

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

applied on an instrument-by-instrument basis.

(f) Korean IFRS 1001 Presentation of Financial Statements - Disclosure of gain or loss on valuation of financial liabilities subject to adjustment of exercise price

If the entire or a part of financial instrument, whose exercise price is subject to change due to the issuer's share price, is classified as a financial liability, the carrying amount of the financial liability and related gains and losses shall be disclosed. The amendments should be applied for annual periods beginning on or after January 1, 2023, and earlier application is permitted. The Group does not expect that these amendments have a significant impact on the financial statements.

2.3 Consolidation

The Group has prepared the consolidated financial statements in accordance with Korean IFRS 1110 *Consolidated Financial Statements*.

(a) Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the Group. They are deconsolidated from the date that control ceases. When the Group ceases to consolidate for a subsidiary because of a loss of control, any retained interest in the subsidiary is remeasured to its fair value with the changed in carrying amount recognized in profit or loss.

The acquisition method of accounting is used to account for business combinations by the Group. The consideration transferred is measured at the fair values of the assets transferred, and identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The Group recognizes any non-controlling interest in the acquired entity on an acquisition-by-acquisition basis either at fair value or at the non-controlling interest's proportionate share of the acquired entity's net identifiable assets. All other non-controlling interests are measured at fair values, unless otherwise required by other standards. Acquisition-related costs are expensed as incurred.

The excess of consideration transferred, amount of any non-controlling interest in the acquired entity and acquisition-date fair value of any previous equity interest in the acquired entity over the fair value of the net identifiable assets acquired is recorded as goodwill. If those amounts are less than the fair value of the net identifiable assets of the business acquired, the difference is recognized directly in the profit or loss as a bargain purchase.

Intercompany transactions, balances and unrealized gains on transactions between group companies are eliminated. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the transferred asset. Accounting policies of subsidiaries have been changed where necessary to ensure consistency with the policies adopted by the Group.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

(b) Associates

Associates are entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting, after initially being recognized at cost. Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interest in the associates. If the Group's share of losses of an associate equals or exceeds its interest in the associate (including long-term interests that, in substance, form part of the Group's net investment in the associate), the Group discontinues recognizing its share of further losses. After the Group's interest is reduced to zero, additional losses are provided for, and a liability is recognized, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate. If there is an objective evidence of impairment for the investment in the associate, the Group recognizes the difference between the recoverable amount of the associate and its book amount as impairment loss. If an associate uses accounting policies other than those of the Group for like transactions and events in similar circumstances, if necessary, adjustments shall be made to make the associate's accounting policies conform to those of the Group when the associate's financial statements are used by the Group in applying the equity method.

2.4 Foreign Currency Translation

(a) Functional and presentation currency

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which each entity operates (the "functional currency"). The consolidated financial statements are presented in Korean won, which is the Parent Company's functional and presentation currency.

(b) Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies at year end exchange rates are generally recognized in profit or loss. They are deferred in other comprehensive income if they relate to qualifying cash flow hedges and qualifying effective portion of net investment hedges, or are attributable to monetary part of the net investment in a foreign operation.

(c) Translation to the presentation currency

The results and financial position of foreign operations that have a functional currency different from the presentation currency are translated into the presentation currency as follows:

- assets and liabilities for each statement of financial position presented are translated at the closing rate at the end of the reporting period,
- income and expenses for each statement of profit or loss are translated at average exchange rates,

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

- equity is translated at the historical exchange rate, and
- all resulting exchange differences are recognized in other comprehensive income.

Goodwill and fair value adjustments to the carrying amounts of assets and liabilities arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated at the closing rate at the end of the reporting period.

2.5 Financial Assets

(a) Classification

The Group classifies its financial assets in the following measurement categories:

- those to be measured at fair value through profit or loss
- those to be measured at fair value through other comprehensive income, and
- those to be measured at amortized cost

The classification depends on the Group's business model for managing the financial assets and the contractual terms of the cash flows.

For financial assets measured at fair value, gains and losses will either be recorded in profit or loss or other comprehensive income. For investments in debt instruments, this will depend on the business model in which the investment is held.

For investments in equity instruments that are not held for trading, this will depend on whether the Group has made an irrevocable election at the time of initial recognition to account for the equity investment at fair value through other comprehensive income. Changes in fair value of non-designated equity investment are recognized in profit or loss.

(b) Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at fair value through profit or loss, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at fair value through profit or loss are expensed in profit or loss.

A. Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the asset. The Group classifies its debt instruments into one of the following three measurement categories:

- Amortized cost: Assets that are held for collection of contractual cash flows where those cash flows represent solely payments of principal and interest are measured at amortized cost. A gain or loss on a debt investment that is subsequently measured at amortized cost

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

and is not part of a hedging relationship is recognized in profit or loss when the asset is derecognized or impaired. Interest income from these financial assets is included in 'finance income' using the effective interest rate method.

- Fair value through other comprehensive income: Assets that are held for collection of contractual cash flows and for selling the financial assets, where the assets' cash flows represent solely payments of principal and interest, are measured at fair value through other comprehensive income. Movements in the carrying amount are taken through other comprehensive income, except for the recognition of impairment loss (reversal of impairment loss), interest income and foreign exchange gains and losses which are recognized in profit or loss. When the financial asset is derecognized, the cumulative gain or loss previously recognized in other comprehensive income is reclassified from equity to profit or loss. Interest income from these financial assets is included in 'finance income' using the effective interest rate method. Foreign exchange gains and losses are presented in 'finance income or expenses' and impairment losses are presented in 'other expenses'.
- Fair value through profit or loss: Assets that do not meet the criteria for amortized cost or fair value through other comprehensive income are measured at fair value through profit or loss. A gain or loss on a debt investment that is subsequently measured at fair value through profit or loss and is not part of a hedging relationship is recognized in profit or loss and presented net in the statement of profit or loss within 'finance income or expenses' in the year in which it arises.

B. Equity instruments

The Group subsequently measures all equity investments at fair value. Where the Group's management has elected to present fair value gains and losses on equity investments, which held for long-term investment or strategic purpose, in other comprehensive income, there is no subsequent reclassification of fair value gains and losses to profit or loss following the derecognition of the investment.

Changes in the fair value of financial assets at fair value through profit or loss are recognized in 'finance income or expenses' in the statement of profit or loss as applicable. Impairment loss (reversal of impairment loss) on equity investments measured at fair value through other comprehensive income are not reported separately from other changes in fair value.

(c) Impairment

The Group assesses on a forward-looking basis the expected credit losses associated with its debt instruments carried at amortized cost and fair value through other comprehensive income. The impairment methodology applied depends on whether there has been a significant increase in credit risk. For trade receivables and lease receivables, the Group applies the simplified approach, which requires expected lifetime credit losses to be recognized from initial recognition of the receivables. (Note 11 provides more detail of how the Group determines there has been a significant increase in credit risk.)

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

(d) Recognition and Derecognition

Regular way purchases and sales of financial assets are recognized or derecognized on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognized when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

If a transfer does not result in derecognition because the Group has retained substantially all the risks and rewards of ownership of the transferred asset, the Group continues to recognize the transferred asset in its entirety and recognizes a financial liability for the consideration received. The Group classified the financial liability as “borrowings” in the statement of financial position.

(e) Offsetting of financial instruments

Financial assets and liabilities are offset and the net amount reported in the statement of financial position where there is a legally enforceable right to offset the recognized amounts and there is an intention to settle on a net basis or realize the assets and settle the liability simultaneously. The legally enforceable right must not be contingent on future events and must be enforceable in the normal course of business and in the event of default, insolvency or bankruptcy of the Group or the counterparty.

2.6 Derivative Instruments

Derivatives are initially recognized at fair value on the date when a derivative contract is entered into and are subsequently remeasured at their fair value at the end of each reporting period. Derivatives that do not qualify for hedge accounting are classified as held for trading and changes in the fair value of any derivative instrument that does not qualify for hedge accounting are recognized immediately in profit or loss within 'finance income (expenses)' based on the nature of transactions.

2.7 Trade Receivables

Trade receivables are recognized initially at the amount of consideration that is unconditional, unless they contain significant financing components when they are recognized at fair value. Trade receivables are subsequently measured at amortized cost using the effective interest method, less loss allowance.

2.8 Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using the moving-weighted average method except for in-transit inventories which are determined using the specific identification method.

2.9 Property, Plant and Equipment

Property, plant and equipment are stated at historical cost less accumulated depreciation and accumulated impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

Depreciation of all property, plant and equipment, except for land, is calculated using the straight-line method to allocate their cost or revalued amounts, net of their residual values, over their estimated useful lives as follows:

	Useful lives
Buildings	20 - 40 years
Structures	20 - 40
Machinery	8 - 10
Vehicles	5
Tools and equipment	5
Right-of-use assets	1 - 36
Others	5

The assets' depreciation method, residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

2.10 Borrowing Costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalized during the period of time that is required to complete and prepare the asset for its intended use or sale. Investment income earned on the temporary investment of specific borrowings on qualifying assets is deducted from the borrowing costs eligible for capitalization. Other borrowing costs are expensed in the period in which they are incurred.

2.11 Government Grants

Grants from the government are recognized at their fair value where there is a reasonable assurance that the grant will be received and the Group will comply with all attached conditions. Government grants related to assets are presented in the statement of financial position by deducting the grant in arriving at the carrying amount of the asset, and government grants related to income are deferred and later deducted from the related expense.

2.12 Intangible Assets

Intangible assets are initially recognized at its historical cost, and carried at cost less accumulated amortization and accumulated impairment losses.

Membership rights that have an indefinite useful life are not subject to amortization because there is no foreseeable limit to the period over which the assets are expected to be utilized. The Group amortizes intangible assets with a limited useful life using the straight-line method over the following periods:

	Useful lives
Industrial rights	5 - 10 years
Facility usage rights	10
Other intangible assets	5 - 10

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

2.13 Impairment of Non-financial Assets

Intangible assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment, or more frequently if events or changes in circumstances indicate that they might be impaired. Other assets are tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value in use. Non-financial assets that suffered an impairment are reviewed for possible reversal of the impairment at the end of each reporting period.

2.14 Trade and Other Payables

These amounts represent liabilities for goods and services provided to the Group prior to the end of reporting period which are unpaid. The amounts are unsecured and are usually paid within 30 days of recognition. Trade and other payables are presented as current liabilities, unless payment is not due within 12 months after the reporting period. They are recognized initially at their fair value and subsequently measured at amortized cost using the effective interest method.

2.15 Financial Liabilities

(a) Classification and measurement

The Group's financial liabilities at fair value through profit or loss are financial instruments held for trading. A financial liability is held for trading if it is incurred principally for the purpose of repurchasing in the near term. A derivative that is not a designated as hedging instruments and an embedded derivative that is separated are also classified as other financial liabilities.

The Group classifies non-derivative financial liabilities, except for financial liabilities at fair value through profit or loss, financial guarantee contracts and financial liabilities that arise when a transfer of financial assets does not qualify for derecognition, as financial liabilities carried at amortized cost and present as 'trade and other payables', and 'borrowings' in the statement of financial position.

Borrowings are initially recognized at fair value, net of transaction costs incurred. Borrowings are subsequently measured at amortized cost. Any difference between the proceeds (net of transaction costs) and the redemption amount is recognized in profit or loss over the period of the borrowings using the effective interest method. Fees paid on the establishment of loan facilities are recognized as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. In this case, the fee is deferred until the draw-down occurs. To the extent there is no evidence that it is probable that some or all of the facility will be drawn down, the fee is capitalized as a prepayment for liquidity services and amortized over the period of the facility to which it relates.

Preferred shares that require mandatory redemption on a specific date are classified as liabilities. Interest expenses on these preferred shares using the effective interest method are recognized in the statement of profit or loss as 'finance costs', together with interest expenses recognized from other financial liabilities.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting period.

(b) Derecognition

Financial liabilities are removed from the statement of financial position when it is extinguished; for example, when the obligation specified in the contract is discharged or cancelled or expired or when the terms of an existing financial liability are substantially modified. The difference between the carrying amount of a financial liability extinguished or transferred to another party and the consideration paid (including any non-cash assets transferred or liabilities assumed) is recognized in profit or loss.

2.16 Greenhouse Gas Emission Permits and Obligations

With enforcement of *The Act on the Allocation and Trading of Greenhouse Gas Emission Permits*, emission permits that are allocated free of charge from the government are measured at zero, and emission permits purchased are recognized at acquisition cost by including any directly attributable costs incurred during the normal course of business. Emission permits are carried at cost less accumulated impairment losses, and those to be submitted to the government within one year from the end of reporting period are classified as current assets.

Emission obligation is a present obligation of submitting the allowances to the government. Emissions obligations are measured as the sum of the carrying amount of the allocated allowances that will be submitted to the government and the best estimate of expenditure required to settle the obligation at the end of reporting period for any excess emission. The emission obligations to be settled within one year from the end of the reporting period are classified as current liabilities.

The Group derecognizes the emission permits when the emission allowance is disposed or submitted to the government or becomes unable to be disposed or submitted, and accordingly, the future economic benefits are no longer expected to be probable. The Group derecognizes the emission obligations when the Group submits the emission permits to the government. The emission permits and emission obligations are classified as intangible assets and provisions, respectively, in the statement of financial position.

2.17 Provisions

Provisions for restoration and others are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting period, and the increase in the provision due to the passage of time is recognized as interest expense.

2.18 Current and Deferred Tax

The tax expense for the period consists of current and deferred tax. Current and deferred tax is recognized in profit or loss, except to the extent that it relates to items recognized in other

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

comprehensive income or directly in equity. In this case, the tax is also recognized in other comprehensive income or directly in equity, respectively.

The current income tax expense is measured at the amount expected to be paid to the taxation authorities, using the tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation, and considers whether it is probable that a taxation authority will accept an uncertain tax treatment. The Group measures its tax balances either based on the most likely amount or the expected value, depending on which method provides a better prediction of the resolution of the uncertainty.

Deferred income tax is provided in full, using the liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated financial statements. However, deferred income tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting profit nor taxable profit or loss.

Deferred tax assets are recognized only if it is probable that future taxable amounts will be available to utilize those temporary differences and losses.

The Group recognizes a deferred tax liability all taxable temporary differences associated with investments in subsidiaries, associates, and interests in joint arrangements, except to the extent that the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. In addition, The Group recognizes a deferred tax asset for all deductible temporary differences arising from such investments to the extent that it is probable the temporary difference will reverse in the foreseeable future and taxable profit will be available against which the temporary difference can be utilized.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred tax balances relate to the same taxation authority. Current tax assets and tax liabilities are offset when the Group has a legally enforceable right to offset and intends either to settle on a net basis, or to realize the assets and settle the liability simultaneously.

2.19 Employee Benefits

The Group operates both defined contribution and defined benefit pension plans.

For defined contribution plans, the Group pays contribution to publicly or privately administered pension insurance plans on mandatory, contractual or voluntary basis. The Group has no further payment obligation once the contribution has been paid. The contribution is recognized as employee benefit expense when they are due.

A defined benefit plan is a pension plan that is not a defined contribution plan. Generally, post-employment benefits are payable after the completion of employment, and the benefit amount depended on the employee's age, periods of service or salary levels. The liability recognized in the statement of financial position in respect of defined benefit pension plans is the present value of the

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

defined benefit obligation at the end of the reporting period less the fair value of plan assets. The defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms approximating to the terms of the related obligation. Remeasurement gains and losses arising from experience adjustments and changes in actuarial assumptions are recognized in the period in which they occur, directly in other comprehensive income.

Changes in the present value of the defined benefit obligation resulting from plan amendments or curtailments are recognized immediately in profit or loss as past service costs.

The Group provides long-term employee benefits that are entitled to employees with service period for ten years and above. The expected costs of these benefits are accrued over the period of employment using the same accounting methodology as used for defined benefit pension plans. The Group recognizes service cost, net interest on other long-term employee benefits and remeasurements as profit or loss for the year. These liabilities are valued annually by an independent qualified actuary.

2.20 Revenue Recognition

The Group manufactures and sells a variety of products and merchandises including polypropylene, TPA, film, NF3, optical film and polyketone.

Sales are recognized when control of products and merchandises has transferred, being when the products and the merchandises are delivered to the customer and there is no unfulfilled obligation that could affect the customer's acceptance of the products and the merchandises. Delivery occurs when the products have been shipped to the specific location, the risks of obsolescence and loss have been transferred to the customer, and either the customer has accepted the products in accordance with the sales contract, the acceptance provisions have lapsed, or the Group has objective evidence that all criteria for acceptance have been satisfied. Also, when the Group exports products and merchandises under the terms of Incoterms Group C, the Group identifies the transportation service as a separate performance obligation since the transportation service is carried out after the control of products and merchandises has been transferred to the customer.

2.21 Leases

(a) Lessee

The Group leases various offices, warehouses, vehicles, facilities and others. Lease contracts are typically made for fixed periods, but may have extension options or termination options as described in (b) below.

Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. However, for leases of real estate for which the Group is lessee, the Group applies the practical expedient which has elected not to separate lease and non-lease components and instead accounts

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

for these as a single lease component.

Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose any covenants, but leased assets may not be used as security for borrowing purposes.

The Group determines the lease term as the non-cancellable period of a lease, together with both (i) periods covered by an option to extend the lease if the lessee is reasonably certain to exercise that option; and (ii) periods covered by an option to terminate the lease if the lessee is reasonably certain not to exercise that option. When the lessee and the lessor each has the right to terminate the lease without permission from the other party, the Group should consider a termination penalty in determining the period for which the contract is enforceable.

Assets and liabilities arising from a lease are initially measured on a present value basis. Lease liabilities include the net present value of the following lease payments:

- Fixed payments (including in-substance fixed payments), less any lease incentives receivable
- Variable lease payment that are based on an index or a rate, initially measured using the index or rate as at the commencement date
- Amounts expected to be payable by the Group (the lessee) under residual value guarantees
- The exercise price of a purchase option if the Group (the lessee) is reasonably certain to exercise that option, and
- Payments of penalties for terminating the lease, if the lease term reflects the Group (the lessee) exercising that option

The Group is exposed to potential future increases in variable lease payments based on an index or rate, which are not included in the lease liability until they take effect. When adjustments to lease payments based on an index or rate take effect, the lease liability is reassessed and adjusted against the right-of-use asset.

Each lease payment is allocated between the liability and finance expense. The finance expense is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability
- any lease payments made at or before the commencement date less any lease incentives received
- any initial direct costs, and

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

- restoration costs

The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis. If the Group is reasonably certain to exercise a purchase option, the right-of-use asset is depreciated over the underlying asset's useful life.

Payments associated with short-term leases and leases of low-value assets are recognized on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less without a purchase option. Low-value assets comprise IT-equipment and small items.

(b) Extension and termination options

Extension and termination options are included in a number of property and equipment leases across the Group. These terms are used to maximize operational flexibility in terms of managing contracts. The majority of extension and termination options held are exercisable only by the Group and not by the respective lessor.

(c) Residual value guarantees

To optimize lease costs during the contract period, the Group sometimes provides residual value guarantees in relation to leases.

2.22 Segment Reporting

The Group has a single operating segment in accordance with Korean IFRS 1108 *Operating Segments*.

2.23 Approval of Issuance of the Financial Statements

The consolidated financial statements 2022 were approved for issue by the Board of Directors on January 30, 2023 and are subject to change with the approval of shareholders at their Annual General Meeting.

3. Critical Accounting Estimates and Assumptions

The preparation of financial statements requires the Group to make estimates and assumptions concerning the future. Management also needs to exercise judgement in applying the Group's accounting policies. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. As the resulting accounting estimates will, by definition, seldom equal the related actual results, it can contain a significant risk of causing a material adjustment.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below. Additional information of significant judgement and assumptions of certain items are included in relevant notes.

(a) Impact of Coronavirus disease 2019 ("COVID-19")

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

Although global economy deteriorated due to Coronavirus disease 2019 (“COVID-19”), the Group has not identified any risks that could impact the financial performance or position of the Group as at December 31, 2022. It has sufficient headroom and sufficient working capital and undrawn financing facilities to service its operating activities and ongoing investments. However, significant accounting estimates and assumptions applied in the preparation of the consolidated financial statements can be adjusted depending on changes in the uncertainty from COVID-19. Also, the ultimate effect of COVID-19 to the Group’s business, financial position and financial performance cannot presently be determined.

(b) Impact of Russia’s war on Ukraine

Russia’s war on Ukraine is continuing and Russia is imposed to the international sanctions. Due to the limitations of Russian banks’ access to the SWIFT (Society for Worldwide Interbank Financial Telecommunication) payment system, the lack of liquidity in the foreign exchange market as well as the significant decline in value of the Rubles and the decline in value of Russian companies’ securities are in progress. As a result, the Group may experience situations such as a decrease in value of financial assets or operating assets owned by the Group regarding the conflict, an increase in receivable payment terms, limitation to transfer funds, a decrease in the profit. As at December 31, 2022, the Group holds approximately ₩ 107 million of trade receivables for companies in Russia and Ukraine, but these trade receivables are insured by the Korea Trade Insurance Corporation. The Group does not expect these receivables to have a significant impact on the financial statements.

(c) Impairment of assets

The Group considers value-in-use when calculating recoverable amount for the impairment test of cash generating units (CGU). The value-in-use is calculated by discounting estimated future cash flows of CGU with the appropriate discount rate (Note 15).

(d) Income taxes

The Group’s taxable income generated from these operations are subject to income taxes based on tax laws and interpretations of tax authorities in numerous jurisdictions. There are many transactions and calculations for which the ultimate tax determination is uncertain (Note 24).

If certain portion of the taxable income is not used for investments or increase in wages or dividends in accordance with the *Tax System for Recirculation of Corporate Income*, the Group is liable to pay additional income tax calculated based on the tax laws. The new tax system is effective for three years from 2015. Accordingly, the measurement of current and deferred income tax is affected by the tax effects from the new tax system. As the Group’s income tax is dependent on the investments, increase in wages and dividends, there is an uncertainty measuring the final tax effects.

(e) Fair value of financial instruments

The fair value of financial instruments that are not traded in an active market is determined by using valuation techniques. The Group uses its judgment to select a variety of methods and make assumptions that are mainly based on market conditions existing at the end of each reporting period (Note 5).

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

(f) Impairment of financial assets

The provisions for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Group uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Group's past history, existing market conditions as well as forward looking estimates at the end of each reporting period (Note 11).

(g) Net defined benefit liability

The present value of net defined benefit liability depends on a number of factors that are determined on an actuarial basis using a number of assumptions including the discount rate (Note 23).

(h) Lease

In determining the lease term, management considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. Extension options (or periods after termination options) are only included in the lease term if the lease is reasonably certain to be extended (or not terminated).

4. Financial Risk Management

4.1 Financial Risk Factors

The Group's activities expose it to a variety of financial risks: market risk (including exchange risk, fair value interest rate risk, cash flow interest rate risk and price risk), credit risk and liquidity risk. The Group's overall risk management program focuses on the unpredictability of the financial markets and seeks to minimize any adverse effects on the financial performance of the Group. The Group uses derivative financial instruments to hedge certain risk exposures.

Risk management is carried out under policies approved by the management committee within the Board of Directors. The committee reviews and approves written principles for overall risk management, as well as written policies covering specific areas, such as foreign exchange risk, interest rate risk, credit risk, use of derivative financial instruments and non-derivative financial instruments, and investments exceeding liquidity.

4.1.1 Market Risk

(a) Foreign exchange risk

The Group operates internationally and is exposed to foreign exchange risk, primarily the US dollar, Euro, Japanese Yen and Vietnamese Don. Foreign exchange risk arises from future commercial transactions, recognized assets liabilities and net investments in foreign operations.

Management has set up a policy to require operations to manage their foreign exchange risk against their functional currency.

The Group has certain investments in foreign operations, whose net assets are exposed to foreign

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

currency translation risk.

The table below summarizes the impact of weakened/strengthened Korean won by 10% against foreign currencies on the Group's pre-tax profit for the period, with all other variables held constant.

(in millions of Korean won)

		Impact on post-tax profit	
		2022	2021
USD	Strengthened	₩ (1,822)	₩ (10,465)
	Weakened	1,822	10,465
EUR	Strengthened	56	(120)
	Weakened	(56)	120
JPY	Strengthened	(60)	174
	Weakened	60	(174)
VTN	Strengthened	(429)	(3,187)
	Weakened	429	3,187
Others	Strengthened	(290)	-
	Weakened	290	-

(b) Price risk

The Group is exposed to equity securities price risk arises from investments held by the Group that are classified as at fair value through other comprehensive income in the consolidated statement of financial position.

The Group's equity investments are publicly traded and are included in the KOSPI index.

The table below summarizes the impact of increases/decreases of this index on the Group's equity and post-tax profit for the year. The analysis is based on the assumption that the equity index has increased/decreased by 10% with all other variables held constant.

(in millions of Korean won)

		Impact on equity	
		2022	2021
KOSPI	Increase 10%	₩ 2	₩ 5
	Decrease 10%	(2)	(5)

(c) Interest rate risk

Interest rate risk is defined as the risk that the interest income or expenses arising from deposits and borrowings will fluctuate due to changes in future market interest rate. The interest rate risk mainly arises through floating rate deposits and borrowings. The objective of the Group's interest rate risk management lies in maximizing corporate value by minimizing uncertainty in interest rates fluctuations and net interest expense.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

The Group holds fixed and floating interest rate borrowings and is exposed to interest rate risk from the floating interest rate borrowings. The Group's management reviews interest rate fluctuation periodically and manages the interest rate risk by repaying or refinancing the borrowings.

The table below summarizes the impact of increase/decrease of interest rate by 100 basis points on the Group's pre-tax profit for the period, with all other variable held constant.

<i>(in millions of Korean won)</i>	Impact on post-tax profit			
		2022		2021
Increase	₩	(16,733)	₩	(14,447)
Decrease		16,733		14,447

4.1.2 Credit Risk

Credit risk is managed on a group basis. Credit risk arises from cash and cash equivalents, financial assets and outstanding receivables, etc. If customers are independently rated, these ratings are used. Otherwise, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. The compliance with credit limit is regularly monitored by line management. See Note 11 for more information about credit risk.

The maximum exposure to credit risk as at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>		2022		2021
Cash and cash equivalents ¹	₩	106,277	₩	34,776
Trade and other receivables		333,403		327,974
Other financial assets		1,511		756
Long-term trade and other receivables		3,716		3,409
Other non-current financial assets		2,584		1,043

¹ Difference from 'Cash and cash equivalents' in the consolidated statements of financial position represents cash on hand.

4.1.3 Liquidity Risk

The Group monitors rolling forecasts of the Group's liquidity requirements to ensure it has sufficient cash to meet operational needs while maintaining sufficient headroom on its undrawn committed borrowing facilities at all times so that the Group does not breach borrowing limits or covenants (where applicable) on any of its borrowing facilities. The Group's liquidity forecast comprehensively considers short-term and long-term financing plan, compliance of covenants, and target financial ratios.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of the Group's liquidity risk analysis as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022			
	Less than 1 year	Between 1 and 5 years	Over 5 years	Total
Trade and other payables	₩ 406,595	₩ 13,594	₩ -	₩ 420,189
Borrowings (including interest expense)	1,358,450	1,328,674	3,165	2,690,289
Derivative instruments	9,215	278	-	9,493
Lease liabilities	3,722	19,543	2,368	25,633
Total	<u>₩ 1,777,982</u>	<u>₩ 1,362,089</u>	<u>₩ 5,533</u>	<u>₩ 3,145,604</u>

(in millions of Korean won)

	2021			
	Less than 1 year	Between 1 and 5 years	Over 5 years	Total
Trade and other payables	₩ 438,810	₩ 13,270	₩ -	₩ 452,080
Borrowings (including interest expense)	817,923	614,523	-	1,432,446
Derivative instruments ¹	535	-	-	535
Lease liabilities	3,715	7,860	686	12,261
Total	<u>₩ 1,260,983</u>	<u>₩ 635,653</u>	<u>₩ 686</u>	<u>₩ 1,897,322</u>

¹ Trading portfolio derivative instruments are included at their fair value within the less than 1 year time bucket. This is because the contractual maturities are not essential to understand the timing of the cash flows. These contracts are managed on a net fair value basis rather than by maturity date.

4.2 Capital Risk Management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern, so the Group can continue to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt.

The Group monitors capital on the basis of the gearing ratio. This ratio is calculated as net debt divided by total capital. Net debt is total borrowings (including 'short and long-term borrowings' as shown in the consolidated statement of financial position) less cash and cash equivalents. Total capital is 'equity' as shown in the consolidated statement of financial position plus net debt.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

The gearing ratio as at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Total borrowings	₩	2,536,174	₩	2,019,974
Less: cash and cash equivalents		(106,319)		(34,797)
Net debt		2,429,855		1,985,177
Total equity		114,617		489,301
Total capital	₩	2,544,472	₩	2,474,478
Gearing ratio		95.50%		80.23%

5. Fair Value of Financial Instruments

During the year ended December 31, 2022, there have been no significant changes in the business and economic environment affecting the fair value of the Group's financial assets and liabilities.

5.1 Fair Value Hierarchy

Items that are measured at fair value of for which the fair value is disclosed are categorized by the fair value hierarchy levels, and the defined levels are as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that an entity can access at the measurement date (Level 1).
- All inputs other than quoted prices included in level 1 that are observable (either directly that is, prices, or indirectly that is, derived from prices) for the asset or liability (Level 2).
- Unobservable inputs for the asset or liability (Level 3).

Fair value hierarchy classifications of the financial instruments that are measured at fair value as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			
	Level 1	Level 2 ¹	Level 3	Total
Assets				
Financial assets at fair value through profit or loss (derivative financial assets, debt securities)	₩ -	₩ 751	₩ 1,500	₩ 2,251
Financial assets at fair value through other comprehensive income (derivative financial assets)	19	-	-	19
Total	₩ 19	₩ 751	₩ 1,500	₩ 2,270
Liabilities				
Financial liabilities at fair value through profit or loss (derivative financial liabilities)	₩ -	₩ 9,493	₩ -	₩ 9,493
Total	₩ -	₩ 9,493	₩ -	₩ 9,493

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

¹ The Group uses market approach as valuation technique for derivative financial assets and liabilities classified as level 2 in fair value hierarchy. Inputs are exchange rates and others.

(in millions of Korean won)

	2021			
	Level 1	Level 2 ¹	Level 3	Total
Assets				
Financial assets at fair value through profit or loss (derivative financial assets)	₩ -	₩ 45	₩ -	₩ 45
Financial assets at fair value through other comprehensive income (derivative financial assets)	45	-	-	45
Total	₩ 45	₩ 45	₩ -	₩ 90
Liabilities				
Financial liabilities at fair value through profit or loss (derivative financial liabilities)	₩ -	₩ 536	₩ -	₩ 536
Total	₩ -	₩ 536	₩ -	₩ 536

¹ The Group uses market approach as valuation technique for derivative financial assets and liabilities classified as level 2 in fair value hierarchy. Inputs are exchange rates and others.

5.1.1 Transfers Between Fair Value Hierarchy Levels of Recurring Fair Value Measurements

There were no transfers between fair value hierarchy levels for the year ended December 31, 2022.

5.1.2. Valuation Techniques and the Inputs

Valuation techniques and inputs used in fair value measurements categorized within Level 2 and Level 3 of the fair value hierarchy as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022					Level 3 Range of inputs (weighted average)
	Fair value	Level	Valuation techniques	Inputs		
Derivatives						
Assets	₩ 751	2	Market approach	Exchange rate, discount rate and others		N/A
Liabilities	9,493	2	Market approach	Exchange rate, discount rate and others		N/A
Debt securities						
Corporate bonds subordinated debt	₩ 1,500	3	Asset value approach	N/A		N/A

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(in millions of Korean won)

	2021					
	Fair value	Level	Valuation techniques	Inputs	Level 3 Range of inputs (weighted average)	
Derivatives						
Assets	₩ 45	2	Market approach	Exchange rate, discount rate and others	N/A	
Liabilities	536	2	Market approach	Exchange rate, discount rate and others	N/A	

5.1.3 Impairment of Financial Assets

The provisions for impairment for financial assets are based on assumptions about risk of default and expected loss rates. The Group uses judgement in making these assumptions and selecting the inputs to the impairment calculation based on the Group's past history, existing market conditions as well as forward looking estimates at the end of each reporting period (Note 11).

6. Segment Information

The Group has a single operating segment in accordance with Korean IFRS 1108 *Segment Reporting*.

Details of revenue broken down by location of the customers for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022		2021	
Korea	₩	1,077,284	₩	862,728
North America		72,832		79,565
Asia		1,163,479		1,006,923
Europe		459,831		494,568
South America		21,398		16,712
Africa		71,463		50,811
Others		12,271		8,658
	₩	2,878,558	₩	2,519,965

The key customer who contributed more than 10% of the Group's revenue is Hyosung TNC Corporation. Details for the year ended December 31, 2022, is as follows:

(in millions of Korean won)

	2022	
	Revenue amount	Revenue %
Hyosung TNC Corporation	₩ 311,664	10.83%

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

There is no key customer who contributes more than 10% of the Group's revenue for the year ended December 31, 2021.

7. Transfer of Financial Assets

Under factoring arrangement, the Group sells trade receivables at a discount to the financial institutions for the years ended December 31, 2022 and 2021. The Group may retain an obligation to compensate a financial institution for debtors' failure to make payment when they become due, an obligation known as a 'recourse obligation'. Recourse obligations related to the sales of receivables with recourse are accounted for as collateralized borrowings (Notes 11, 22 and 38).

Details of transferred financial assets that are not derecognized in their entirety as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	Loans and receivables			
	2022		2021	
Carrying amount of assets	₩	104,833	₩	73,680
Carrying amount of the associated liabilities		(104,833)		(73,680)
Net position	₩	-	₩	-

8. Financial Instruments by Categories

(a) Carrying Amounts of Financial Instruments by Category

Carrying amounts of financial assets and liabilities by category as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			
	Financial assets at amortized cost	Financial assets measured at FVTPL	Financial assets measured at FVTOCI	Total
Assets				
Cash and cash equivalents	₩ 106,319	₩ -	₩ -	₩ 106,319
Trade and other receivables	314,630	18,773	-	333,403
Other financial assets	760	751	-	1,511
Long-term trade and other receivables	3,716	-	-	3,716
Other non-current financial assets	1,065	1,500	19	2,584
	₩ 426,490	₩ 21,024	₩ 19	₩ 447,533

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(in millions of Korean won)

	2022			
	Financial liabilities at amortized cost	Other financial liabilities	Financial liabilities measured at FVTPL	Total
Liabilities				
Trade and other payables ¹	₩ 387,638	₩ 8,905	₩ -	₩ 396,543
Borrowings	1,174,412	107,467	-	1,281,879
Other financial liabilities	-	3,722	9,215	12,937
Long-term trade and other payables	13,594	-	-	13,594
Long-term borrowings	1,254,295	-	-	1,254,295
Other non-current financial liabilities	-	21,273	278	21,551
	<u>₩ 2,829,939</u>	<u>₩ 141,367</u>	<u>₩ 9,493</u>	<u>₩ 2,980,799</u>

¹ The liabilities related to employee benefits are excluded from above trade and other payables.

(in millions of Korean won)

	2021			
	Financial assets at amortized cost	Financial assets measured at FVTPL	Financial assets measured at FVTOCI	Total
Assets				
Cash and cash equivalents	₩ 34,797	₩ -	₩ -	₩ 34,797
Trade and other receivables	304,368	23,606	-	327,974
Other financial assets	-	756	-	756
Long-term trade and other receivables	3,409	-	-	3,409
Other non-current financial assets	998	-	45	1,043
	<u>₩ 343,572</u>	<u>₩ 24,362</u>	<u>₩ 45</u>	<u>₩ 367,979</u>

(in millions of Korean won)

	2021			
	Financial liabilities at amortized cost	Other financial liabilities	Financial liabilities measured at FVTPL	Total
Liabilities				
Trade and other payables ¹	₩ 429,237	₩ -	₩ -	₩ 429,237
Borrowings	506,475	76,117	-	582,592
Other financial liabilities	-	3,715	536	4,251
Long-term trade and other payables	13,270	-	-	13,270
Long-term borrowings	1,437,382	-	-	1,437,382
Other non-current financial liabilities	-	7,638	-	7,638
	<u>₩ 2,386,364</u>	<u>₩ 87,470</u>	<u>₩ 536</u>	<u>₩ 2,474,370</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

¹ The liabilities related to employee benefits are excluded from above trade and other payables.

(b) *Net Gains or Losses by Category of Financial Instruments*

Net gains or losses on each category of financial instruments for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022	2021
Financial assets measured at amortized cost:		
Interest income	₩ 1,485	₩ 209
Gain on foreign currency translation	17,540	3,588
Loss on foreign currency translation	(19,424)	(806)
Loss on foreign currency transaction	(24,293)	(7,653)
Gain on foreign currency transaction	23,579	8,642
Bad debt expense	(2,589)	(151)
Financial liabilities measured at amortized cost:		
Interest expense	(98,084)	(33,356)
Gain on foreign currency translation	24,031	852
Loss on foreign currency translation	(24,979)	(5,365)
Loss on foreign currency transaction	(39,784)	(15,530)
Gain on foreign currency transaction	26,287	6,935
Other financial liabilities		
Interest expense	(3,020)	(805)
Gain on foreign currency translation	4,231	200
Loss on foreign currency translation	(5,468)	(1,248)
Financial assets/liabilities at FVTPL		
Gain (loss) on transaction (profit or loss for the year)	21,252	8,930
Gain (loss) on valuation (profit or loss for the year)	(8,742)	(489)
Financial assets/liabilities at FVTOCI		
Gain (loss) on valuation (other comprehensive income)	(20)	12

9. Cash and Cash Equivalents

Cash and cash equivalents as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	2022	2021
Cash on hand	₩ 42	₩ 21
Bank deposits	106,277	34,776
	<u>₩ 106,319</u>	<u>₩ 34,797</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

10. Restricted Financial Instruments

Restricted financial instruments as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	Description	2022		2021	
Other non-current financial assets	Checking account deposits	₩	15	₩	15

11. Trade and Other Receivables

Details of trade and other receivables as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022					
	Receivable amount		Provision for impairment		Book amount	
Trade receivables	₩	252,125	₩	(3,967)	₩	248,158
Other receivables		85,267		(22)		85,245
Long-term other receivables		3,716		-		3,716
	₩	<u>341,108</u>	₩	<u>(3,989)</u>	₩	<u>337,119</u>

<i>(in millions of Korean won)</i>	2021					
	Receivable amount		Provision for impairment		Book amount	
Trade receivables	₩	216,115	₩	(1,378)	₩	214,737
Other receivables		113,259		(22)		113,237
Long-term other receivables		3,409		-		3,409
	₩	<u>332,783</u>	₩	<u>(1,400)</u>	₩	<u>331,383</u>

The Group has transferred trade receivables amounting to ₩ 104,833 million (2021: ₩ 73,680 million) to banks in exchange for cash as at December 31, 2022. The Group may retain an obligation to compensate a bank for debtors' failure to make payment when they become due; therefore, the transaction has been accounted for as a collateralized borrowing (Notes 7 and 21).

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of other receivables as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Other receivables				
Non-trade receivables	₩	83,286	₩	111,800
Short-term loans		5		12
Deposits provided		1,733		1,424
Others		221		-
		<u>85,245</u>		<u>113,236</u>
Long-term other receivables				
Long-term loans		1,831		1,406
Deposits provided		1,885		2,003
		<u>3,716</u>		<u>3,409</u>
	₩	<u>88,961</u>	₩	<u>116,645</u>

The fair value of long-term trade and other receivables is calculated by discounting nominal value of expected future cash inflows at a discount rate which reflects credit risk.

<i>(in percentage)</i>	2022	2021
Discount rate	1.20%~4.35%	1.60%~3.36%

The aging analysis of trade and other receivables as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022						
	Receivables not past due	Past due but not impaired				Impaired	Total
	Up to 3 months	4 to 6 months	7 to 12 months	Over 12 months			
Trade receivables	₩ 193,121	₩ 49,811	₩ 3,895	₩ 3,283	₩ 835	₩ 1,180	₩ 252,125
Loss allowance provision	(327)	(188)	(554)	(1,252)	(466)	(1,180)	(3,967)
Expected loss rate	0.17%	0.38%	14.22%	38.14%	55.81%	100.00%	1.57%
	<u>192,794</u>	<u>49,623</u>	<u>3,341</u>	<u>2,031</u>	<u>369</u>	<u>-</u>	<u>248,158</u>
Other receivables	85,245	-	-	-	-	22	85,267
Loss allowance provision	-	-	-	-	-	(22)	(22)
	<u>85,245</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>85,245</u>
Long-term other receivables	3,716	-	-	-	-	-	3,716
	<u>₩ 281,755</u>	<u>₩ 49,623</u>	<u>₩ 3,341</u>	<u>₩ 2,031</u>	<u>₩ 369</u>	<u>₩ -</u>	<u>₩ 337,119</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

<i>(in millions of Korean won)</i>	2021							
	Receivables not past due	Past due but not impaired				Impaired	Total	
Up to 3 months		4 to 6 months	7 to 12 months	Over 12 months				
Trade receivables	₩ 162,009	₩ 50,188	₩ 1,194	₩ 1,132	₩ 425	₩ 1,167	₩ 216,115	
Loss allowance provision	(17)	(12)	(34)	(54)	(94)	(1,167)	(1,378)	
Expected loss rate	0.01%	0.02%	2.85%	4.80%	22.18%	100%	0.64%	
	<u>161,992</u>	<u>50,176</u>	<u>1,160</u>	<u>1,078</u>	<u>331</u>	<u>-</u>	<u>214,737</u>	
Other receivables	113,237	-	-	-	-	22	113,259	
Loss allowance provision	-	-	-	-	-	(22)	(22)	
	<u>113,237</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>113,237</u>	
Long-term other receivables	3,409	-	-	-	-	-	3,409	
	<u>₩ 278,638</u>	<u>₩ 50,176</u>	<u>₩ 1,160</u>	<u>₩ 1,078</u>	<u>₩ 331</u>	<u>₩ -</u>	<u>₩ 331,383</u>	

The above amounts do not reflect the present value discount and provisions for impairment.

Individually impaired receivables mainly relate to customers that are experiencing unexpected economic difficulties. The Group expects that a portion of their receivables will be recovered. If the Group determines that no objective evidence of impairment exists for an individually assessed receivable, it collectively assesses them for impairment. The collective impairment assessment is calculated based on credit loss information from sales and related payment data for 24 months as of the end of the reporting period.

Movements on the provisions for impairment of receivables for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			
	Beginning balance	Bad debt expense	Others	Ending balance
Trade receivables	₩ 1,378	₩ 2,589	₩ -	₩ 3,967
Other receivables	22	-	-	22
	<u>₩ 1,400</u>	<u>₩ 2,589</u>	<u>₩ -</u>	<u>₩ 3,989</u>

<i>(in millions of Korean won)</i>	2021			
	Beginning balance	Bad debt expense	Others	Ending balance
Trade receivables	₩ 1,360	₩ 151	₩ (133)	₩ 1,378
Other receivables	22	-	-	22
	<u>₩ 1,382</u>	<u>₩ 151</u>	<u>₩ (133)</u>	<u>₩ 1,400</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Provision for impaired trade receivables and unused amounts reversed are included in the consolidated statement of profit or loss within 'selling, general and administrative expenses' (Note 32). Provision for impaired other receivables and unused amounts reversed are included in the consolidated statement of profit or loss within 'other income and expenses' (Note 33). Receivables for which an impairment provision was recognized are written off against the provision when there is no expectation of recovering additional cash.

12. Other Financial Assets and Liabilities

Other financial assets and liabilities as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022	2021
Other financial assets		
Short-term financial assets	₩ 760	₩ 711
Long-term financial assets	2,564	997
Derivative financial assets	751	45
Financial assets at fair value through other comprehensive income	20	46
	<u>4,095</u>	<u>1,799</u>
Less: current portion	(1,511)	(756)
	<u>₩ 2,584</u>	<u>₩ 1,043</u>
Other financial liabilities		
Lease liabilities	₩ 24,995	₩ 11,353
Derivative financial liabilities	9,492	535
	<u>34,487</u>	<u>11,888</u>
Less: current portion	(12,937)	(4,251)
	<u>₩ 21,550</u>	<u>₩ 7,637</u>

The Group has entered into currency swap contracts to hedge the risk of foreign currency exchange rate fluctuations relating to borrowings as at December 31, 2022. The Group recognizes gain or loss on valuation of derivatives in profit or loss.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of financial assets at fair value through other comprehensive income as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Listed equity securities				
Kakao Bank Co.,Ltd	₩	19	₩	46

Changes in financial assets at fair value through other comprehensive income for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning balance	₩	46	₩	-
Additions		-		31
Gain (loss) on valuation (other comprehensive income)		(26)		15
Ending balance	₩	20	₩	46

Changes in gain or loss on financial assets at fair value through other comprehensive income for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		
	Beginning balance	Other comprehensive income	Ending balance
Before tax	₩ 15	₩ (26)	₩ (11)
Tax effect	(3)	6	3
After tax	₩ 12	₩ (20)	₩ (8)

<i>(in millions of Korean won)</i>	2021		
	Beginning balance	Other comprehensive income	Ending balance
Before tax	₩ -	₩ 15	₩ 15
Tax effect	-	(3)	(3)
After tax	₩ -	₩ 12	₩ 12

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Valuation of derivative financial assets and liabilities as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022		2021	
	Assets	Liabilities	Assets	Liabilities
Current derivative financial assets and liabilities				
Currency swap	₩ 676	₩ 8,956	₩ -	₩ -
Forward exchange	75	259	45	536
	₩ 751	₩ 9,215	₩ 45	₩ 536
Non-current derivative financial assets and liabilities				
Currency swap	-	₩ 278	-	-
	-	278	-	-
	₩ 751	₩ 9,493	₩ 45	₩ 536

13. Other Assets

Details of other assets as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022	2021
Other current assets		
Advance payments	₩ 5,238	₩ 17,235
Prepaid expenses ¹	20,143	15,847
	25,381	33,082
Other non-current assets		
Long-term advance payments	19,223	-
Long-term prepaid expenses	172	96
Other investment assets	11,192	5,121
	30,587	5,217
	₩ 55,968	₩ 38,299

¹ Contract assets of ₩ 4,165 million (2021: ₩ 8,607 million) are included in relation to performance obligation which is satisfied over time.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

14. Inventories

Details of inventories as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			2021		
	Cost	Provision	Book amount	Cost	Provision	Book amount
Merchandise	₩ 3,038	₩ (144)	₩ 2,894	₩ 2,369	₩ (55)	₩ 2,314
Finished goods	221,193	(26,504)	194,689	167,799	(9,056)	158,743
Semi-finished goods	14,426	(190)	14,236	11,316	(159)	11,157
Raw materials	60,968	(7,730)	53,238	135,223	(187)	135,036
Sub-materials	34,246	(5,113)	29,133	30,465	(1,503)	28,962
Supplies	4,054	(491)	3,563	4,246	(262)	3,984
Packaging	1,910	(140)	1,770	2,569	(107)	2,462
Goods in transit	50,300	-	50,300	49,710	-	49,710
Rights of return assets	3,260	-	3,260	-	-	-
	<u>₩ 393,395</u>	<u>₩ (40,312)</u>	<u>₩ 353,083</u>	<u>₩ 403,697</u>	<u>₩ (11,329)</u>	<u>₩ 392,368</u>

Inventories recognized as an expense for the year ended December 31, 2022 amount to ₩ 2,938,059 million (2021: ₩ 2,176,777 million), which is included in 'cost of sales'. Also, the Group recognized loss on valuation of inventories amounting to ₩ 28,983 million (2021: ₩ 7,619 million) for the year ended December 31, 2022, which is included in the statement of profit or loss within 'cost of sales'.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

15. Property, Plant and Equipment

Details of property, plant and equipment as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			2021		
	Cost	Accumulated depreciation ¹	Book amount	Cost	Accumulated depreciation ¹	Book amount
Land	₩ 138,770	₩ -	₩ 138,770	₩ 138,770	₩ -	₩ 138,770
Building	211,949	(54,884)	157,065	210,125	(49,865)	160,260
Structures	708,813	(84,064)	624,749	674,369	(65,710)	608,659
Machinery	2,674,876	(1,718,979)	955,897	2,612,419	(1,511,673)	1,100,746
Vehicles	6,363	(5,390)	973	6,144	(5,148)	996
Tools and equipment	97,916	(70,305)	27,611	92,266	(62,421)	29,845
Others	48,071	(7,200)	40,871	49,059	(2,697)	46,362
Construction in progress	159,896	(3,200)	156,696	33,726	-	33,726
Machinery in transit	76	-	76	239	-	239
Right-of-use assets	93,069	(8,694)	84,375	68,839	(3,838)	65,001
	<u>₩ 4,139,799</u>	<u>₩ (1,952,716)</u>	<u>₩ 2,187,083</u>	<u>₩ 3,885,956</u>	<u>₩ (1,701,352)</u>	<u>₩ 2,184,604</u>

¹ Accumulated impairment losses and government grants are included.

Changes in property, plant and equipment for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022						
	Beginning balance	Additions ¹	Disposal ¹	Depreciation and others ²	Transfers ³	Others (F/X change)	Ending balance
Land	₩ 138,770	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 138,770
Buildings	160,260	-	(410)	(5,145)	168	2,192	157,065
Structures	608,659	-	(53)	(17,974)	544	33,573	624,749
Machinery	1,100,746	2,862	(2,246)	(237,263)	34,341	57,457	955,897
Vehicles	996	-	-	(408)	366	19	973
Tools and equipment	29,845	772	(25)	(9,756)	5,525	1,250	27,611
Others	46,362	11,796	-	(9,962)	(9,216)	1,891	40,871
Construction in progress	33,726	132,893	-	-	(9,125)	(798)	156,696
Machinery in transit	239	41,275	-	-	(41,474)	36	76
Right-of-use assets	65,001	19,763	(111)	(7,582)	3,631	3,673	84,375
	<u>₩ 2,184,604</u>	<u>₩ 209,361</u>	<u>₩ (2,845)</u>	<u>₩ (288,090)</u>	<u>₩ (15,240)</u>	<u>₩ 99,293</u>	<u>₩ 2,187,083</u>

¹ Additions and disposal of right-of-use assets include effect of lease contract changes.

² Others include loss of other tangible assets of ₩ 232 million and supplies expenses for process of ₩ 3,545 million.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

³ Transfers include transfer of construction in progress and machinery in transit transferred to property, plant and equipment, transfers between property, plant and equipment and intangible assets, and others.

(in millions of
Korean won)

	2021									
	Beginning balance	Additions	Disposal ¹	Depreciation and others ²	Transfers ³	Others (F/X change)	Ending balance			
Land	₩ 138,770	₩ -	₩ -	₩ -	₩ -	₩ -	₩ 138,770			
Buildings	154,258	121	-	(4,884)	8,660	2,105	160,260			
Structures	305,724	-	(18)	(10,022)	296,768	16,207	608,659			
Machinery	627,174	1,742	(68)	(160,319)	611,118	21,099	1,100,746			
Vehicles	1,112	-	-	(511)	394	1	996			
Tools and equipment	20,389	680	(9)	(7,828)	16,417	196	29,845			
Others	30,700	3,473	-	(3,733)	15,862	60	46,362			
Construction in progress	576,785	308,717	-	-	(915,134)	63,358	33,726			
Machinery in transit	101	18,581	-	-	(18,443)	-	239			
Right-of-use assets	68,334	1,339	(414)	(6,095)	268	1,569	65,001			
	₩ 1,923,347	₩ 334,653	₩ (509)	₩ (193,392)	₩ 15,910	₩ 104,595	₩ 2,184,604			

¹ Disposal of right-of-use assets include effect of lease contract changes.

² Others include loss of other tangible assets of ₩ 160 million and supplies expenses for process of ₩ 3,572 million.

³ Transfers include transfer of construction in progress and machinery in transit transferred to property, plant and equipment, transfers between property, plant and equipment and intangible assets, and others.

Depreciation includes ₩ 280,447 million (2021: ₩ 185,874 million) in manufacturing costs, ₩ 3,745 million (2021: ₩ 3,471 million) in 'selling, general and administrative expenses' and ₩ 122 million (2021: ₩ 541 million) in 'research and development expenses'.

Certain amounts of the property, plant and equipment are provided as collaterals to financial institutions for borrowings (Note 38).

Government grants

The Group entered into development agreements with Korea Evaluation Institute of Industrial Technology and others for various national research projects, including development of materials related to Polyketone and High-Purity Hydrogen Chloride.

As at December 31, 2022, the balance of government grants related to asset acquisition is ₩ 3,924 million (2021: ₩ 610 million), and there is no balance of liabilities related to government grants.

Fair value of land as at December 31, 2022, is ₩ 173,845 million (2021: ₩ 165,669 million) and the fair value is estimated based on the value determined by the Korean government, which is announced for property tax assessment purposes, etc.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Impairment Test on Cash Generating Unit (CGU)

The Group performed impairment test on CGUs of POK business and Hyosung Vina Chemical that had an indication of impairment, and cash flows were estimated assuming that COVID-19 will end within the estimated period upon measurement of value-in use. In addition, when estimating the recovery rate, the recovery period and the discount rate of cash flows, the industry characteristics and historical data of the CGU were comprehensively considered. The assumptions applied for the estimate of value-in-use of CGU as at December 31, 2022, are as follows:

	POK business	Hyosung Vina Chemical
Sales growth rate	0.0 ~ 39.6%	9.3 ~ 71.4%
Gross margin	2.8 ~ 16.6%	-19.8 ~ 15.4%
Perpetual growth rate	0.0%	1.0%
Discount rate	11.01%	10.07%

As a result, the book amounts of cash generating unit are not expected to exceed the recoverable amounts.

The expected impairment loss upon fluctuation in perpetual growth rate and discount rate are as follows:

	Impairment	
	POK business	Hyosung Vina Chemical
Decrease in perpetual growth rate by 0.5%pt	₩	- ₩
Increase in discount rate by 0.5%pt		-

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

16. Leases

(a) Amounts recognized in the consolidated statements of financial position

The consolidated statements of financial position shows the following amounts relating to leases:

<i>(in millions of Korean won)</i>	2022	2021
Right-of-use assets ¹		
Real estate	₩ 7,167	₩ 5,012
Land	60,965	56,567
Water	262	254
Facility equipment	260	11
Vehicles	467	580
Others	15,254	2,577
	<u>₩ 84,375</u>	<u>₩ 65,001</u>

¹ Included in 'property, plant and equipment' in the consolidated statements of financial position.

<i>(in millions of Korean won)</i>	2022	2021
Lease liabilities ¹		
Current	₩ 3,722	₩ 3,715
Non-current	21,273	7,638
	<u>₩ 24,995</u>	<u>₩ 11,353</u>

¹ Included in 'other financial liabilities' in the consolidated statements of financial position.

Additions to right-of-use assets due to new contracts and changes in lease contracts amount to ₩ 19,763 million for the year ended December 31, 2022 (2021: ₩ 1,339 million).

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(b) Amount recognized in the consolidated statements of profit or loss

The amounts recognized in the consolidated statements of profit or loss in relation to leases are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Depreciation of right-of-use assets				
Real estate	₩	3,405	₩	3,318
Land		2,058		2,236
Water		9		16
Facility equipment		10		21
Vehicles		342		311
Others		1,758		192
	₩	<u>7,582</u>	₩	<u>6,094</u>
Interest expense (included in financial cost)	₩	896	₩	203
Expense relating to short-term leases and leases of low-value assets (included in 'cost of sales' and 'selling, general and administrative expenses')		5,698		4,108

The total cash outflow for leases in 2022 was ₩ 10,378 million (2021: ₩ 7,906 million).

17. Intangible Assets

Changes in intangible assets for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022			
	Industrial rights	Other intangible assets¹	Membership	Total
Beginning balance	₩ 1,305	₩ 26,673	₩ 6,000	₩ 33,978
Additions	58	220	-	278
Amortization	(322)	(3,240)	-	(3,562)
Transfers and others ²	-	(77)	-	(77)
Others (F/X change)	-	1,590	-	1,590
Ending balance	<u>₩ 1,041</u>	<u>₩ 25,166</u>	<u>₩ 6,000</u>	<u>₩ 32,207</u>

¹ Construction in progress, facility usage rights and greenhouse gas emission permits etc. are included.

² Transfers include transfers between property, plant and equipment and intangible assets, etc.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

<i>(in millions of Korean won)</i>	2021			
	Industrial rights	Other intangible assets ¹	Membership	Total
Beginning balance	₩ 1,602	₩ 14,324	₩ 7,200	₩ 23,126
Additions	69	15,850	-	15,919
Disposals	-	(2,506)	(1,200)	(3,706)
Amortization	(366)	(2,393)	-	(2,759)
Transfers and others ²	-	(73)	-	(73)
Others (F/X change)	-	1,471	-	1,471
Ending balance	₩ 1,305	₩ 26,673	₩ 6,000	₩ 33,978

¹ Facility usage rights and etc. are included.

² Transfers include transfers between property, plant and equipment and intangible assets, etc.

Amortization of ₩ 2,790 million (2021: ₩ 2,171 million) is included in manufacturing costs, ₩ 231 million (2021: ₩ 253 million) in 'research and development expenses', and ₩ 541 million (2021: ₩ 335 million) in 'selling, general and administrative expenses'

18. Insurance Coverage

As at December 31, 2022, property, plant and equipment are insured, and details of insurance are as follows:

<i>(in millions of Korean won)</i>	Insured assets	Book amount	Insured amount	Insurance company
Package insurance	Property, plant and equipment and others	₩ 2,136,559	₩ 7,184,378	Samsung Fire and Marine Insurance Co., Ltd. and others

19. Investments in Associates

Details of investments in associates as at December 31, 2022 and 2021, are as follows:

	Percentage of ownership (%)		Location	Reporting month
	2022	2021		
Shinwha Intertek Corp.	20%	20%	Korea	December 31

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Changes in investments in associates for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022					
	Beginning	Acquisition (disposal)	Valuation of equity method			Ending
			Loss on equity method investments	Other comprehensive income	Others	
Shinwha Intertek Corp.	₩ 16,189	₩ -	₩ (1,690)	₩ 71	₩ -	₩ 14,570

(in millions of Korean won)

	2021					
	Beginning	Acquisition (disposal)	Valuation of equity method			Ending
			Gain on equity method investments	Other comprehensive income	Others ¹	
Shinwha Intertek Corp.	₩ 15,716	₩ -	₩ 326	₩ 438	₩ (291)	₩ 16,189

¹ The Group recognized dividends received and adjustments of legal reserves amounting to ₩ (-) 291 million for the year ended December 31, 2021.

Summary of condensed financial information of associates, details of adjustments from the book amount of investments in associates, and dividends received from associates as at and for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022									
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Operating income from continuing operations	Other comprehensive income	Total comprehensive income	Dividends received from associates	
Shinwha Intertek Corp.	₩ 69,033	₩ 103,844	₩ 80,376	₩ 120	₩ 201,246	₩ (8,396)	₩ 155	₩ (8,241)	₩ -	

(in millions of Korean won)

	2021									
	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Revenue	Operating income from continuing operations	Other comprehensive income	Total comprehensive income	Dividends received from associates	
Shinwha Intertek Corp.	₩ 68,277	₩ 105,700	₩ 64,582	₩ 8,923	₩ 246,413	₩ 1,177	₩ 474	₩ 1,651	₩ 291	

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of adjustments from financial information of associates to the book amount of investments in associates as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022						
	Net assets (a)	Percentage of ownership (b)	Interests in net assets (axb)	Goodwill	Inter-group transactions	Others	Book amount
Shinwha Intertek Corp.	₩ 92,381	20.00%	₩ 18,476	₩ -	₩ -	₩ (3,906)	₩ 14,570

<i>(in millions of Korean won)</i>	2021						
	Net assets (a)	Percentage of ownership (b)	Interests in net assets (axb)	Goodwill	Inter-group transactions	Others	Book amount
Shinwha Intertek Corp.	₩ 100,472	20.00%	₩ 20,094	₩ -	₩ -	₩ (3,905)	₩ 16,189

Fair value of marketable investments in associates as at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	2022			
	Number of shares	Market price per share (in Korean won)	Fair value	Book amount
Shinwha Intertek Corp.	5,827,100	₩ 3,365	₩ 19,608	₩ 14,570

<i>(in millions of Korean won)</i>	2021			
	Number of shares	Market price per share (in Korean won)	Fair value	Book amount
Shinwha Intertek Corp.	5,827,100	₩ 3,055	₩ 17,802	₩ 16,189

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

20. Related Party Transactions

Details of associates and other related parties as at December 31, 2022, are as follows:

Significant Influence over the Group

Location	Related party
Domestic	Hyosung Corporation

Associates

Location	Related party
Domestic	Shinwha Intertek Corp.

Other related parties

Location	Related party
Domestic	Galaxia Device Co., Ltd., GALAXIA ELECTRONICS CO., LTD., Kongduk Development Co., Ltd., THE CLASS HYOSUNG, THE PREMIUM HYOSUNG Co., Ltd., Dong Ryung Co., Ltd., Shin Dong Jin Co., Ltd., A-Seung Automotive Group, Trinity Asset Management Co., Ltd, Hyosung Premier Motors Corporation, ASC Co. Ltd., Hyosung GoodSprings, Inc., HYOSUNG TNS INC., atmplus, Inc, NAUTILUS HYOSUNG CMS INC, Forza Motors Korea Corp., HYOSUNG FMS INC. and others
China	DONGGUAN SHINWHA INTERTEK CORP., SHINWHA INTERTEK(SUZHOU) and others
Asia	HYOSUNG FINANCIAL SYSTEM VINA Co.,Ltd and others
Europe	Hyosung RUS and others
America	Hyosung Holdings USA, Inc., Hyosung Mexico S. de R.L. de C.V., GST Safety Textiles Mexico S. de R.L. de C.V, and others
Others	Hyosung Resource (Australia) PTY Ltd. and others

Others¹

Location	Related party
Domestic	Hyosung Heavy Industries Corporation, Hyosung Advanced Materials Corporation, Hyosung TNC Corporation, CHINHUNG INTERNATIONAL INC., Taebaek Wind Power Co., Ltd., Pyeongchang Wind Power Co., Ltd., THE KWANGJUILBO, Somesevit Corporation, Hyosung ITX. CO., LTD, HYOSUNG INFORMATION SYSTEMS CO.,LTD and others
China	GST Automotive Safety(Changshu) Co. Ltd, Hyosung Spandex (Jiaxing) Co., Ltd., Hyosung Chemical Fiber(Jiaxing) Co., Ltd., Hyosung Spandex (Quzhou) Co., Ltd., Hyosung Chemicals(Jiaxing) Co., Ltd., Hyosung International Trade(Jiaxing) Co., Ltd., Hyosung Spandex (GuangDong) Co., Hyosung Spandex (Zhuhai) Co. and others

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Asia	Hyosung (Taiwan) Corporation, HYOSUNG INDIA Pvt Ltd, Hyosung Corporation India Private Limited., Hyosung DongNai Co,LTD, Hyosung International(HK) Ltd., Hyosung Japan Co., Ltd., Hyosung Singapore PTE Ltd., Hyosung Vietnam Co., Ltd., HYOSUNG T&D INDIA Pvt Ltd and others
America	GST Automotive Safety Components International LLC, HICO America Sales & Tech., HYOSUNG BRASIL INDUSTRIA E COMERCIO DE FIBRAS LTDA., Hyosung Mexico CITY S.A de C.V. and others
Europe	Global Safety Textiles GmbH, Green Plan Energy (Wellingborough) Limited, GST Global GmbH, Hyosung Europe SRL, Hyosung Istanbul TEKSTIL LTD.STI, Hyosung Luxembourg S.A and others
Others	GST Automotive Safety South Africa(Proprietary) Limited, Hyosung South Africa (PTY) LTD. and others

¹ Although the entities are not related parties of the Group in accordance with Korean IFRS 1024, the entities belong to the large enterprise group that the Group also belongs to in accordance with the Monopoly Regulation and Fair Trade Act.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Sales and purchases with related parties for the years ended December 31, 2022 and 2021, are as follows:

(in millions of
Korean won)

		2022									
Related party		Sales and others¹		Purchases and others¹		Acquisition of property, plant and equipment and intangible assets	Acquisition of right-of-use assets	Interest expense²			
Significant influence over the Group	Hyosung Corporation	₩	15	₩	177,443	₩	-	₩	-	₩	-
Associates	Shinwha Intertek Corp.		11,916		-		-		-		-
Other related parties	Shin Dong Jin Co., Ltd.		-		122		-		4,462		178
	Kongduk Development Co., Ltd.		-		6		-		516		24
	PT.Hyosung Jakarta ³		-		249		-		-		-
	Hyosung Holdings USA		18,671		27		-		-		-
	Others		-		501		-		-		-
			18,671		905		-		4,978		202
Others	Hyosung TNC Corporation		311,664		111,797		-		-		48
	Hyosung Heavy Industries Corporation		-		3,704		9,706		-		-
	Hyosung Advanced Materials Corporation		-		367		-		-		-
	Hyosung Japan Co., Ltd.		120,765		2,305		-		-		-
	Hyosung NEW Material & High Technology (Quzhou) Co., Ltd		-		150		-		-		-
	Hyosung International(HK) Ltd.		8,538		-		-		-		-
	Hyosung Chemical Fiber(Jiaxing) Co., Ltd.		7,080		49,654		-		-		-
	Others		4,004		13,504		-		45		2
			452,051		181,481		9,706		45		50
		₩	482,653	₩	359,829	₩	9,706	₩	5,023	₩	252

¹ Sales, other income, interest income and others are included in sales and others. Purchase of raw materials, selling, general and administrative expenses, other expenses and others are included in purchases and others.

² Interest expense recognized in accordance with lease contracts of buildings is ₩ 252 million for the year ended December 31, 2022.

³ In June 2022, its shares were transferred from Hyosung Corporation to Hyosung TNC Corporation and therefore, it was changed from other related parties to others.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(in millions of
Korean won)

		2021										
		Sales and others ¹		Purchases and others ¹		Acquisition of property, plant and equipment and intangible assets	Acquisition of right-of-use assets	Interest expense ²				
Related party		₩	₩	₩	₩	₩	₩	₩	₩			
Significant influence over the Group Associates Other related parties	Hyosung Corporation	₩	6	₩	125,248	₩	-	₩	-	₩	-	
	Shinwha Intertek Corp.		11,869		113		-		-		-	
	Shin Dong Jin Co., Ltd.		-		97		-		37		55	
	Kongduk Development Co., Ltd.		-		8		-		-		6	
	Hyosung Trans World Co., Ltd. ³		-		5,310		-		-		-	
	Hyosung Holdings USA		7,208		32		-		-		-	
	Others		-		1,067		17		-		-	
				7,208		6,514		17		37		61
Others	Hyosung TNC Corporation		224,615		94,542		-		-		64	
	Hyosung Heavy Industries Corporation		-		2,154		13,309		-		-	
	Hyosung Advanced Materials Corporation		-		356		-		-		-	
	Hyosung Japan Co., Ltd.		68,078		18		-		-		-	
	Hyosung NEW Material & High Technology (Quzhou) Co., Ltd		8,523		-		-		-		-	
	Hyosung International(HK) Ltd.		13,307		-		-		-		-	
	Hyosung Chemical Fiber(Jiaxing) Co., Ltd.		4,209		35,824		-		-		-	
	Others		2,191		6,461		281		115		1	
				320,923		139,355		13,590		115		65
		₩	340,006	₩	271,230	₩	13,607	₩	152	₩	126	

¹ Sales, other income, interest income and others are included in sales and others. Purchase of raw materials, selling, general and administrative expenses, other expenses and others are included in purchases and others.

² Interest expense recognized in accordance with lease contracts of buildings is ₩ 126 million for the year ended December 31, 2021.

³ It represented the transaction amounts before the merger with Hyosung Corporation in February 2021.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Outstanding balances arising from sales/purchases of goods and services as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)		2022					
		Trade receivables	Other receivables and others ¹	Trade payables	Other payables and others ¹	Lease liabilities ²	
	Related party						
Significant influence over the Group	Hyosung Corporation	₩ 3	₩ 52	₩ 380	₩ 17,680	₩ -	-
Associates	Shinwha Intertek Corp.	3,999	-	-	-	-	-
Other related parties	Shin Dong Jin Co., Ltd.	-	1,381	-	226	4,931	-
	Kongduk Development Co., Ltd.	-	144	-	1	618	-
	Hyosung Holdings USA	4,352	-	-	1	-	-
	Others	-	-	-	-	-	-
		<u>4,352</u>	<u>1,525</u>	<u>-</u>	<u>228</u>	<u>5,549</u>	
Others	Hyosung TNC Corporation	21,577	524	8,163	1,306	1,349	-
	Hyosung Heavy Industries Corporation ³	-	-	154	124	-	-
	Hyosung Advanced Materials Corporation	-	366	36	-	-	-
	PT.Hyosung Jakarta ⁴	-	-	-	38	-	-
	Hyosung Chemical Fiber(Jiaying) Co., Ltd.	1,980	-	4,685	-	-	-
	Hyosung Japan Co., Ltd.	4,115	1,530	-	-	-	-
	Hyosung NEW Material & High Technology (Quzhou) Co., Ltd	-	-	-	-	-	-
	Hyosung Chemical (Jiaying) Co., Ltd.	1,872	18	-	-	-	-
	Others	701	-	2,701	310	27	-
		<u>30,245</u>	<u>2,438</u>	<u>15,739</u>	<u>1,778</u>	<u>1,376</u>	
		<u>₩ 38,599</u>	<u>₩ 4,015</u>	<u>₩ 16,119</u>	<u>₩ 19,686</u>	<u>₩ 6,925</u>	

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

¹ Non-trade receivables, advance payments, guarantee deposits and others are included in other receivables. Non-trade payables, deposits received, provisions for restoration and others are included in other payables.

² The balance of lease liabilities recognized in accordance with lease contracts of buildings amount to ₩ 6,925 million as at December 31, 2022.

³ The Group recognized ₩ 6,000 million of memberships for Hyosung Heavy Industries Corporation as memberships.

⁴ In June 2022, its shares were transferred from Hyosung Corporation to Hyosung TNC Corporation and therefore, it was changed from other related parties to others.

(in millions of
Korean won)

		2021					
	Related party	Trade receivables	Other receivables and others ¹	Trade payables	Other payables and others ¹	Lease liabilities ²	
Significant influence over the Group	Hyosung Corporation	₩ -	₩ 52	₩ 347	₩ 26,637	₩ -	
Associates	Shinwha Intertek Corp.	1,417	-	-	-	-	
Other related parties	Shin Dong Jin Co., Ltd.	-	1,122	-	-	2,444	
	Kongduk Development Co., Ltd.	-	151	-	-	360	
	PT.Hyosung Jakarta	-	-	-	35	-	
	Hyosung Holdings USA	2,647	-	-	2	-	
	Others	-	-	1	200	-	
		<u>2,647</u>	<u>1,273</u>	<u>1</u>	<u>237</u>	<u>2,804</u>	
Others	Hyosung TNC Corporation	22,648	524	9,144	935	1,880	
	Hyosung Heavy Industries Corporation ³	-	-	242	6,623	-	
	Hyosung Advanced Materials Corporation	-	366	38	-	-	
	Hyosung Chemical Fiber(Jiaxing) Co., Ltd.	1,787	-	7,743	-	-	
	Hyosung Japan Co., Ltd.	3,834	-	10	-	-	
	Hyosung NEW Material & High Technology (Quzhou) Co., Ltd	499	-	-	-	-	
	Hyosung Chemical (Jiaxing) Co., Ltd.	656	18	-	-	-	
	Others	1,922	8	-	1,160	149	
		<u>31,346</u>	<u>916</u>	<u>17,177</u>	<u>8,718</u>	<u>2,029</u>	
		<u>₩ 35,410</u>	<u>₩ 2,241</u>	<u>₩ 17,525</u>	<u>₩ 35,592</u>	<u>₩ 4,833</u>	

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

¹ Non-trade receivables, advance payments, guarantee deposits and others are included in other receivables. Non-trade payables, deposits received, provisions for restoration and others are included in other payables.

² The balance of lease liabilities recognized in accordance with lease contracts of buildings amount to ₩ 4,833 million as at December 31, 2021.

³ The Group recognized ₩ 6,000 million of memberships for Hyosung Heavy Industries Corporation as memberships.

Fund transactions with related parties for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>		2022			
		Borrowing transactions		Contributions in cash	Acquisition of shares
	Related party	Borrowings ¹	Repayments ¹		
Other related parties	Shin Dong Jin Co., Ltd.	₩ 4,463	₩ 2,162	₩ -	₩ -
	Kongduk Development Co., Ltd.	521	258	-	-
		4,984	2,420	-	-
Others	Hyosung TNC Corporation	-	531	-	-
	KB Wise Star Professional Investment Private Real Estate Investment Trust #11	-	48	-	-
		-	579	-	-
		₩ 4,984	₩ 2,999	₩ -	₩ -

¹ The Group recognized additional lease liabilities amounting to ₩ 4,984 million due to lease contract of the office as at December 31, 2022. The repayments of lease liabilities and interest expense amount to ₩ 2,999 million and ₩ 252 million, respectively, for the year ended December 31, 2022.

<i>(in millions of Korean won)</i>		2021			
		Borrowing transactions		Contributions in cash	Acquisition of shares
	Related party	Borrowings ¹	Repayments ¹		
Other related parties	Shin Dong Jin Co., Ltd.	₩ 37	₩ 2,239	₩ -	₩ -
	Kongduk Development Co., Ltd.	-	500	-	-
		37	2,739	-	-
Others	Hyosung TNC Corporation	-	515	-	-
	KB Wise Star Professional Investment Private Real Estate Investment Trust #11	113	29	-	-
		113	544	-	-
		₩ 150	₩ 3,283	₩ -	₩ -

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

¹ The Group recognized additional lease liabilities amounting to ₩ 150 million due to lease contract of the office as at December 31, 2021. The repayments of lease liabilities and interest expense amount to ₩ 3,283 million and ₩ 126 million, respectively, for the year ended December 31, 2021.

The compensation paid or payable to key management who are executive directors for employee services for the years ended December 31, 2022 and 2021, consists of:

<i>(in millions of Korean won)</i>	2022		2021	
Salaries and other short-term employee benefits	₩	738	₩	1,155
Post-employment benefits		127		93
	₩	<u>865</u>	₩	<u>1,248</u>

There are no payment guarantees provided by the Group to the related parties as at December 31, 2022.

There are no collaterals provided by the Group to the related parties as at December 31, 2022.

21. Trade Payables and Other Payables

Trade payables and other payables as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Trade payables	₩	284,416	₩	235,034
Other payables		122,179		203,776
Long-term other payables		13,594		13,270
	₩	<u>420,189</u>	₩	<u>452,080</u>

Details of other payables as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Other payables				
Non-trade payables	₩	94,369	₩	171,090
Accrued expenses		26,203		30,141
Withholdings		1,550		2,488
Deposits received		57		57
		<u>122,179</u>		<u>203,776</u>
Long-term other payables				
Non-trade payables		2		2
Accrued expenses		1,072		1,263

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Deposits received	12,520	12,004
	13,594	13,269
	₩ 135,773	₩ 217,045

The fair value of long-term other payables is calculated by discounting nominal value of expected future cash inflows at a discount rate which reflects credit risk.

<i>(in percentage)</i>	2022	2021
Discount rate	1.20%~2.50%	1.20%~2.50%

The fair value of trade and other payables are similar to the book amount as at December 31, 2022.

22. Borrowings

Borrowings as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022	2021
Short-term borrowings	₩ 537,945	₩ 263,594
Borrowings on trade receivables sales ¹	107,467	76,117
Long-term borrowings	1,423,332	1,187,946
Debentures	467,430	492,317
	2,536,174	2,019,974
Less: current portion	(1,281,879)	(582,592)
	₩ 1,254,295	₩ 1,437,382

¹ The Group sells trade receivables in foreign currency to financial institutions and accounts for as collateralized borrowings for transactions in which the Group has recourse to pay the relevant amount to the bank when the sales customers go bankrupt. (Notes 7 and 38)

The Group provides a part of the Group's property, plant and equipment as collateral for the above borrowings. (Notes 15 and 38)

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of carrying amount of short-term borrowings as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	Creditor	Latest maturity date	Annual interest rate (2022) (%)		2022		2021	
Short-term borrowings denominated in Korean won								
General loan	Kookmin Bank and others	2023-08-24	4.09~4.88%	₩	53,000	₩	7,900	
Others	Korea Development Bank and others	2023-09-21	0.44~6.92%		142,497		7,742	
Short-term borrowings denominated in foreign currency								
General loan	Korea Development Bank and others	2023-10-14	3.00~6.96%		342,448		247,951	
Borrowings on trade receivables sales	Woori Bank and others	-	-		107,467		76,118	
					₩	645,412	₩	339,711

Details of carrying amount of long-term borrowings as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	Creditor	Latest maturity date	Annual interest rate (2022) (%)		2022		2021	
Long-term borrowings denominated in Korean won								
General loan	Korea Development Bank and others	2024-10-28	2.48~5.07%	₩	92,000	₩	50,000	
Facility loan	Korea Development Bank and others	2027-01-18	2.27~4.87%		100,000		-	
Long-term borrowings denominated in foreign currency								
General loan	Korea Exim Bank and others	2026-03-11	1.15~6.77%		127,390		53,348	
Facility loan	Korea Development Bank and others	2023-07-07	7.57~7.65%		1,103,942		1,084,598	
					1,423,332	1,187,946		
Less: current portion					(509,493)	(48,000)		
					₩	913,839	₩	1,139,946

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Details of carrying amount of debentures as at December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

		Latest maturity date	Annual interest rate (2022) (%)		2022		2021
Private bond	1	2022-03-08	3.19%	₩	-	₩	30,000
Public bond	2-1	2022-05-10	2.55%		-		85,000
Public bond	2-2	2024-05-10	3.03%		50,000		50,000
Public bond	3-1	2022-12-02	2.49%		-		80,000
Public bond	3-2	2024-12-03	2.89%		54,000		54,000
Public bond	4-1	2023-02-17	2.47%		117,000		117,000
Public bond	4-2	2025-02-19	2.74%		67,000		67,000
Private bond	5	2023-09-22	2.42%		10,000		10,000
Private bond	6	2025-06-16	4.94%		50,000		-
Private bond	7	2025-08-25	4.95%		100,000		-
Private bond	8	2024-10-25	6.80%		20,000		-
					468,000		493,000
Discount on debentures					(570)		(683)
Less: current portion					(126,975)		(194,881)
					₩ 340,455		₩ 297,436

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

23. Net Defined Benefit Liabilities

Details of net defined benefit assets recognized in the consolidated statements of financial position as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Present value of defined benefit obligations	₩	59,658	₩	68,443
Fair value of plan assets ¹		<u>(70,850)</u>		<u>(73,564)</u>
Net defined benefit assets	₩	<u>(11,192)</u>	₩	<u>(5,121)</u>

¹ The contributions to the National Pension Fund of ₩ 31 million (2021: ₩ 34 million) are included in the fair value of plan assets as at December 31, 2022.

The amounts of defined benefit plan recognized in the consolidated statements of income for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Current service cost	₩	8,282	₩	8,201
Interest expense		1,956		1,449
Interest income		<u>(2,227)</u>		<u>(1,744)</u>
Total expense included in employee benefit	₩	<u>8,011</u>	₩	<u>7,906</u>

Line items including total expense of defined benefit plan in the consolidated statements of income for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Cost of sales	₩	5,262	₩	5,269
Selling, general and administrative expenses		2,633		2,531
Research and development expenses		<u>116</u>		<u>106</u>
	₩	<u>8,011</u>	₩	<u>7,906</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Movements in the defined benefit obligations for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning balance	₩	68,443	₩	65,126
Current service cost		8,282		8,201
Interest expense		1,956		1,449
Benefit payments		(6,183)		(4,722)
Remeasurements:				
Change in demographic assumptions		-		(1,431)
Change in financial assumptions		(14,586)		(1,278)
Experience adjustments		629		1,615
Transfer from (to) associates		1,117		(517)
Ending balance	₩	<u>59,658</u>	₩	<u>68,443</u>

Movements in the fair value of plan assets for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning balance	₩	73,564	₩	68,562
Interest income		2,227		1,744
Employer's contributions		-		7,900
Benefit payments		(5,538)		(3,265)
Remeasurements		(986)		(944)
Transfer from (to) associates		1,583		(433)
Ending balance	₩	<u>70,850</u>	₩	<u>73,564</u>

Plan assets as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	2022		2021	
	Amount	Portion (%)	Amount	Portion (%)
Fixed interest financial instruments	₩ 36,581	51.7	₩ 66,768	90.8
Deposits and others	34,269	48.3	6,796	9.2
	<u>₩ 70,850</u>	<u>100.0</u>	<u>₩ 73,564</u>	<u>100.0</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Remeasurements of net defined benefit liabilities recognized as other comprehensive income (expenses) for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Before income tax effects	₩	12,971	₩	149
Income tax effects		(3,139)		(36)
After income tax effects	₩	9,832	₩	113

Accumulated remeasurements of net defined benefit liabilities recognized as retained earnings is ₩ (95) million (2021: ₩ 9,737 million) as at December 31, 2022.

The significant actuarial assumptions as at December 31, 2022 and 2021, are as follows:

<i>(in percentage)</i>	2022		2021	
Discount rate		5.33%		2.98%
Salary growth rate		2.93%		3.22%

The sensitivity of the defined benefit obligation to changes in the principal assumptions is:

	Changes in assumption	Impact on defined benefit obligation
Discount rate	1.0% Increase/Decrease	7.01% Decrease / 8.11% Increase
Salary growth rate	1.0% Increase/Decrease	8.23% Increase / 7.24% Decrease

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. The sensitivity of the defined benefit obligation to changes in principal actuarial assumptions is calculated using the projected unit credit method, the same method applied when calculating the defined benefit obligations recognized on the consolidated statement of financial position.

Effect of defined benefit obligation on future cash flows

The Group reviews the funding level on an annual basis and has a policy of eliminating deficit from the fund. Expected contributions to post-employment benefit plans for the year ending December 31, 2023, are ₩ 6,482 million and the expected balance of plan assets is ₩ 75,697 million as at December 31, 2023.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

The expected maturity analysis of undiscounted pension benefits as at December 31, 2022, is as follows:

<i>(in millions of Korean won)</i>		Less than 1 year		Between 1~2 years		Between 2~5 years		Over 5 years		Total
Pension benefits	₩	5,296	₩	6,330	₩	20,066	₩	83,937	₩	115,629

The weighted average duration of the defined benefit obligations is 9.03 years.

The expense recognized in the current period in relation to defined contribution plan was ₩ 1,336 million (2021: ₩ 1,421 million).

24. Tax Expense (benefit) and Deferred Tax

Income tax expense (benefit) for the years ended December 31, 2022 and 2021, consists of:

<i>(in millions of Korean won)</i>		2022		2021
Current tax				
Current tax on profit for the year	₩	-	₩	47,280
Claim for tax return and others		(6,218)		(2,009)
		(6,218)		45,271
Deferred tax				
Decrease in temporary differences		(33,368)		(1,315)
Effects of changes in tax rate		474		-
		(32,894)		(1,315)
Income tax charged directly to equity		(272)		-
Tax expense (benefit)	₩	(39,384)	₩	43,956

The tax on the Group's profit(loss) before tax differs from the theoretical amount that would arise using the weighted average tax rate applicable to profits of the Group as follows:

<i>(in millions of Korean won)</i>		2022		2021
Profit(Loss) before income tax expense	₩	(448,251)	₩	102,372
Tax expense(benefit) at domestic tax rates applicable to profits in the respective countries		(30,284)		41,711
Income tax effects:				
- Income not subject to tax		(20)		(41)
- Expenses not deductible for tax purposes		569		415
- Claim for tax return and others		(1,656)		(1,957)

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

<i>(in millions of Korean won)</i>	2022	2021
- Tax credits	-	(697)
- Effect of the tax system for recirculation of corporate income	(4,462)	4,525
- Changes in deferred taxes due to changes in the tax rate	474	-
- Others	(4,005)	-
Income tax expense	<u>₩ (39,384)</u>	<u>₩ 43,956</u>

The tax effect relating to components of other comprehensive income (expenses) for the years ended December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	2022			2021		
	Before tax	Tax effect	After tax	Before tax	Tax effect	After tax
Remeasurements of post-employment benefit obligation	₩ 12,971	₩ (3,139)	₩ 9,832	₩ (149)	₩ 36	₩ (113)
Overseas operations translation gain (loss)	(24,572)	272	(24,300)	(27,969)	-	(27,969)
Gain (loss) on valuation of financial assets at fair value through other comprehensive income	(27)	6	(21)	(15)	4	(11)
	<u>₩ (11,628)</u>	<u>₩ (2,861)</u>	<u>₩ (14,489)</u>	<u>₩ (28,133)</u>	<u>₩ 40</u>	<u>₩ (28,093)</u>

The analysis of deferred tax assets and deferred tax liabilities as at December 31, 2022 and 2021, is as follows:

<i>(in millions of Korean won)</i>	2022	2021
Deferred tax assets		
Deferred tax assets to be recovered after more than 12 months	₩ 60,931	₩ 37,001
Deferred tax assets to be recovered within 12 months	6,611	3,423
	<u>67,542</u>	<u>40,424</u>
Deferred tax liabilities		
Deferred tax liabilities to be recovered after more than 12 months	(27,118)	(28,944)
Deferred tax liabilities to be recovered within 12 months	(31)	(848)
	<u>(27,149)</u>	<u>(29,792)</u>
Deferred tax assets, net	<u>₩ 40,393</u>	<u>₩ 10,632</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

The movements in the deferred income tax account for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning balance	₩	10,632	₩	9,357
Tax charged to the statement of profit or loss		32,894		1,315
Tax charged to components of other comprehensive income		(3,133)		(40)
Ending balance	₩	<u>40,393</u>	₩	<u>10,632</u>

The movement in deferred tax assets and liabilities for the years ended December 31, 2022 and 2021, without taking into consideration the offsetting of balances within the same tax jurisdiction, is as follows:

<i>(in millions of Korean won)</i>	2022			
	Beginning balance	Profit or loss	Other comprehensive income	Ending balance
Deferred tax liabilities				
Surplus on revaluation of land	₩ (11,133)	₩ 460	₩ -	₩ (10,673)
Defined benefit pension plan assets	(17,794)	4,564	(3,139)	(16,369)
Others	(865)	757	-	(108)
	<u>(29,792)</u>	<u>5,781</u>	<u>(3,139)</u>	<u>(27,150)</u>
Deferred tax assets				
Post-employment benefit obligation	16,306	(2,482)	-	13,824
Provision for receivables in excess of tax limit	-	570	-	570
Government grants	145	(30)	-	115
Loss on valuation of inventories	1,704	2,525	-	4,229
Impairment loss on property, plant and equipment	16,866	(3,616)	-	13,250
Accrued compensated absence	951	(27)	-	924
Long-term employment allowance	306	(57)	-	249
Unused tax losses	-	29,470	-	29,470
Others	4,146	760	6	4,912
	<u>40,424</u>	<u>27,113</u>	<u>6</u>	<u>67,543</u>
	₩ 10,632	₩ 32,894	₩ (3,133)	₩ 40,393

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(in millions of Korean won)

	2021			
	Beginning balance	Profit or loss	Other comprehensive income	Ending balance
Deferred tax liabilities				
Surplus on revaluation of land	₩ (11,133)	₩ -	₩ -	₩ (11,133)
Defined benefit pension plan assets	(16,255)	(1,503)	(36)	(17,794)
Others	(65)	(800)	-	(865)
	<u>(27,453)</u>	<u>(2,303)</u>	<u>(36)</u>	<u>(29,792)</u>
Deferred tax assets				
Post-employment benefit obligation	15,244	1,062	-	16,306
Provision for receivables in excess of tax limit	84	(84)	-	-
Government grants	21	124	-	145
Loss on valuation of inventories	617	1,087	-	1,704
Impairment loss on property, plant and equipment	16,866	-	-	16,866
Accrued compensated absence	785	166	-	951
Long-term employment allowance	357	(51)	-	306
Others	2,836	1,314	(4)	4,146
	<u>36,810</u>	<u>3,618</u>	<u>(4)</u>	<u>40,424</u>
	<u>₩ 9,357</u>	<u>₩ 1,315</u>	<u>₩ (40)</u>	<u>₩ 10,632</u>

The Group recognize deferred income tax assets as the Group determined it is probable that there will be sufficient taxable profits before unused tax losses were expired. Meanwhile, the Group does not recognize deferred tax assets if it is not probable that the temporary difference will reverse in the foreseeable future, and also the Group did not recognize deferred tax assets for taxable temporary differences associated with investments in associates, where deferred tax assets are unrealizable in the future. Therefore, the Group did not recognize deferred income tax assets of ₩ 21,262 million (2021: ₩ 21,262 million) as at December 31, 2022.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

25. Other Liabilities

Details of other liabilities as at December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Other current liabilities				
Unearned revenues ¹	₩	4,802	₩	9,278
Provision for greenhouse gas emission ²		182		76
Provision for service warranties ³		3,260		-
Advances from customers		6,093		8,736
		<u>14,337</u>		<u>18,090</u>
Other non-current liabilities				
Unearned revenues		779		996
Provision for loss		10,423		12,240
Provision for restoration		58		59
		<u>11,260</u>		<u>13,295</u>
	₩	<u>25,597</u>	₩	<u>31,385</u>

¹ In relation to the performance obligation satisfied over time, contract liabilities of ₩ 4,165 million are included.

² Regarding greenhouse gas emissions, the Group sets provision for expected expenses arising from emissions exceeding the Group's emission rights capacity in a given year. (Note 39)

³ The Group estimates the costs expected to be paid in the future related to the return of sold finished goods and recognizes them as provisions.

Changes in provisions for the year ended December 31, 2022, are as follows:

<i>(in millions of Korean won)</i>	Greenhouse gas emission		Loss		Restoration		Service warranties		Total	
Beginning balance	₩	76	₩	12,240	₩	59	₩	-	₩	12,375
Profit or loss:		106		(1,817)		(1)		3,260		1,548
Additional provisions		182		2,669		3		3,260		6,114
Used during the year		(76)		(4,486)		(4)		-		(4,566)
Ending balance	₩	<u>182</u>	₩	<u>10,423</u>	₩	<u>58</u>	₩	<u>3,260</u>	₩	<u>13,923</u>
Current	₩	182	₩	-	₩	-	₩	3,260	₩	3,442
Non-current		-		10,423		58		-		10,481

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Changes in provisions for the year ended December 31, 2021, are as follows:

<i>(in millions of Korean won)</i>	Greenhouse gas emission	Loss	Restoration	Others	Total
Beginning balance	₩ 2,960	₩ 5,782	₩ 59	₩ 1	₩ 8,802
Profit or loss:	(2,884)	6,458	-	(1)	3,573
Additional provisions	76	6,511	-	-	6,587
Used during the year	<u>(2,960)</u>	<u>(53)</u>	<u>-</u>	<u>(1)</u>	<u>(3,014)</u>
Ending balance	₩ 76	₩ 12,240	₩ 59	₩ -	₩ 12,375
Current	₩ 76	₩ -	₩ -	₩ -	₩ 76
Non-current	-	12,240	59	-	12,299

26. Share Capital

The Group's total number of authorized shares is 200,000,000 shares and the total number of ordinary shares issued is 3,190,126 shares with a par value of ₩ 5,000 per share. There is no change in share capital for the year ended December 31, 2022.

27. Retained Earnings (Accumulated deficit)

Retained earnings (Accumulated deficit) as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	2022	2021	Remark
Legal reserves	₩ 1,907	₩ 1,907	1
Retained earnings before appropriation (undisposed accumulated deficit)	<u>(273,331)</u>	<u>124,318</u>	
	<u>₩ (271,424)</u>	<u>₩ 126,225</u>	

¹ The Commercial Code of the Republic of Korea requires the Group to appropriate for each financial period, as a legal reserve, an amount equal to a minimum of 10% of cash dividends paid until such reserve equals 50% of its issued share capital. The reserve is not available for cash dividends payment, but may be transferred to share capital or used to reduce accumulated deficit. When the accumulated legal reserves (the sum of capital reserves and earned profit reserves) are greater than 1.5 times the paid-in capital amount, the excess legal reserves may be distributed (in accordance with a resolution of the shareholders' meeting).

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Changes in retained earnings (accumulated deficit) for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning	₩	126,225	₩	67,607
Profit (loss) for the year		(408,867)		58,416
Remeasurements of net defined benefit liabilities		9,936		257
Loss (gain) on valuation of investments in associates		1,282		(55)
Ending	₩	<u>(271,424)</u>	₩	<u>126,225</u>

28. Other Components of Equity

Other components of equity as at December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	2022		2021	
Other capital surplus	₩	1,268	₩	1,268
Treasury shares ¹		(1,843)		(1,843)
Changes in equity from applying the equity method		(133)		1,182
Overseas operations translation gain		43,108		18,808
Gain (loss) on valuation of financial assets at fair value through other comprehensive income		(8)		12
	₩	<u>42,392</u>	₩	<u>19,427</u>

¹ The Group holds 12,331 treasury shares due to spin-off in 2018.

29. Revenue

Details of revenue for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Revenue from contracts with customers	₩	2,869,998	₩	2,512,412
Performance obligation satisfied at a point in time		2,741,019		2,418,495
Performance obligation satisfied over time		128,979		93,917
Revenue from other sources: rental and sub-lease rental income		8,560		7,553
	₩	<u>2,878,558</u>	₩	<u>2,519,965</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

30. Expenses by Nature

Cost of sales, selling, general and administrative expenses and research and development expenses by nature for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Changes in inventories of finished goods and work in process and others	₩	(39,026)	₩	(87,193)
Sales of merchandise		73,205		51,907
Raw materials and consumables used		2,085,553		1,508,001
Employee benefits expenses (Note 31)		127,557		126,909
Depreciation and amortization		287,876		192,645
Electricity expense		194,805		133,211
Export expense		203,303		134,880
Fuel expense		36,413		21,000
Service expense		21,179		19,195
Outsourcing expense		5,648		5,557
Other expenses		218,772		277,279
Total ¹	₩	<u>3,215,285</u>	₩	<u>2,383,391</u>

¹ Total of cost of sales, selling, general and administrative expenses and research and development expenses in the consolidated statements of profit or loss.

31. Employee Benefits Expenses

Employee benefits expenses for the years ended December 31, 2022 and 2021, consist of:

<i>(in millions of Korean won)</i>	2022		2021	
Salaries	₩	101,826	₩	104,563
Employee welfare benefits		16,384		13,019
Pension costs – defined contribution plans (Note 23)		1,336		1,421
Pension costs – defined benefit plans (Note 23)		8,011		7,906
	₩	<u>127,557</u>	₩	<u>126,909</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

32. Selling, General and Administrative Expenses

Selling, general and administrative expenses for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Salaries	₩	26,099	₩	28,395
Post-employment benefits		2,792		2,817
Employee welfare benefits		3,934		3,114
Training		577		469
Service expenses		3,379		3,210
Transportation		1,504		550
Communications		550		504
Taxes and dues		1,334		1,380
Rental expenses		800		687
Depreciation		3,745		3,470
Amortization		541		335
Bad debt expenses		2,589		151
Advertising expenses		1,008		225
Commission expenses		16,329		16,203
Export expenses		15,354		13,086
Others		5,153		4,323
	₩	85,688	₩	78,919

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

33. Other Income and Other Expenses

Details of other income and other expenses for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022	2021
Other operating income		
Rental income	₩ 308	₩ 298
Gain on disposal of property, plant and equipment	2,129	275
Gain on disposal of leased assets	6	1
Miscellaneous gains	3,978	6,857
	<u>6,421</u>	<u>7,431</u>
Other operating expenses		
Donations	560	911
Loss on disposal of property, plant and equipment	2,233	74
Loss on disposal of lease assets	2	4
Miscellaneous expenses	2,725	2,078
	<u>5,520</u>	<u>3,067</u>
	<u>₩ 901</u>	<u>₩ 4,364</u>

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

34. Finance Income and Expenses

Details of finance income and expenses for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022	2021
Finance income		
Interest income		
- Financial assets at amortized costs	₩ 1,485	₩ 209
Gain on foreign currency transactions	50,942	15,854
Gain in foreign currency translation	45,801	4,638
Gain on derivative transactions	30,747	10,278
Gain on valuation of derivatives	489	45
Others	64	2
	<u>129,528</u>	<u>31,026</u>
Finance expenses		
Interest income		
- Financial liabilities at amortized costs	98,085	33,356
- Other financial liabilities	3,020	805
Loss on foreign currency transactions	64,895	23,588
Loss on foreign currency translation	49,871	7,419
Loss on derivative transactions	9,521	1,348
Loss on valuation of derivatives	9,231	536
Others	5,639	2,865
	<u>240,262</u>	<u>69,917</u>
	<u>₩ (110,734)</u>	<u>₩ (38,891)</u>

The Group recognizes income and expenses related to exchange differences as finance income and expenses.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

35. Earnings (Loss) Per Share

Basic earnings (loss) per ordinary share is calculated as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Profit(loss) attributable to the ordinary equity holders ¹	₩	(408,867)	₩	58,416
Weighted average number of ordinary shares outstanding ²		3,177,795		3,177,795
Earnings(loss) per share <i>(in Korean won)</i>	₩	(128,664)	₩	18,383

¹ Profit(loss) attributable to the ordinary equity holders is equal to profit(loss) for the year.

² Weighted average number of ordinary shares outstanding for the year ended December 31, 2022, are 3,177,795 shares. The Group purchased treasury shares of 12,331 as odd shares, which resulted from spin-off, after the Group got re-listed on July 13, 2018. The Group has not issued the potential ordinary shares and accordingly diluted earnings per share is identical to basic earnings per share.

36. Dividends

There are no dividends per share and a total dividend in respect of the years ended December 31, 2021 and 2020.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

37. Statement of Cash Flows

Details of cash generated from operations for the years ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Profit (loss) before income tax	₩	(448,251)	₩	102,372
Adjustments for:				
Interest income and expenses		99,619		33,956
Loss on foreign currency translation		4,070		2,781
Loss on derivative transactions and valuation of derivatives		(12,485)		(8,439)
Depreciation and amortization		287,876		192,645
Gain on disposal of property, plant and equipment and investment property		104		(201)
Bad debt expense and other bad debt expense		2,589		151
Post-employment benefits		8,011		7,906
Gain (loss) on investments in associates		1,690		(326)
Provision for loss on valuation of inventories		28,983		7,619
Valuation and scrap loss of inventories		1,315		1,074
Contribution to provisions (Warranty expenses)		15,179		12,327
Loss on the disposal of financial assets		(26)		-
Long-term employee benefits		50		-
Loss on obsolescence of property, plant and equipment		2,969		-
Gain (loss) on disposal of leased assets		(4)		3
Others		8,378		26,136
Changes in operating assets and liabilities:				
Increase in trade receivables		(36,010)		(36,142)
Increase (decrease) in inventories		10,302		(260,358)
Increase (decrease) in other receivables		27,685		(59,459)
Increase in other assets		(17,669)		(5,710)
Increase in trade payables		49,382		80,641
Increase (decrease) in other payables		(32,730)		36,630
Payment of defined benefit liabilities		(1,111)		(1,542)
Payment of plan assets		-		(7,900)
Cash generated from (used in) operations	₩	(84)	₩	124,164

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Changes in liabilities arising from financial activities for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022					
	Short-term borrowings	Current portion of long-term borrowings	Debentures	Long-term borrowings	Lease liabilities	Total
Beginning balance	₩ 339,711	₩ 242,881	₩ 297,436	₩ 1,139,946	₩ 11,353	₩ 2,031,327
Cash flows	287,115	(28,000)	(25,326)	186,717	(3,783)	416,723
Gain on foreign currency translation	1,201	-	-	127	-	1,328
Amortization of discount on debentures	-	-	68,346	-	-	68,346
Effect of non-cash transactions	17,385	421,586	-	(412,951)	17,425	43,445
Ending balance	₩ 645,412	₩ 636,467	₩ 340,456	₩ 913,839	₩ 24,995	₩ 2,561,169

(in millions of Korean won)

	2021					
	Short-term borrowings	Current portion of long-term borrowings	Debentures	Long-term borrowings	Lease liabilities	Total
Beginning balance	₩ 192,346	₩ 111,418	₩ 491,828	₩ 864,601	₩ 14,104	₩ 1,674,297
Cash flows	137,343	(43,615)	(97,979)	270,365	(3,428)	262,686
Gain on foreign currency translation	657	-	-	-	-	657
Amortization of discount on debentures	-	-	490	-	-	490
Effect of non-cash transactions	9,365	175,078	(96,903)	4,980	677	93,197
Ending balance	₩ 339,711	₩ 242,881	₩ 297,436	₩ 1,139,946	₩ 11,353	₩ 2,031,327

Details of major transactions without cash inflows and outflows for the years ended December 31, 2022 and 2021, are as follows:

(in millions of Korean won)

	2022	2021
Transfer of construction in progress	₩ 50,599	₩ 933,578
Transfer of borrowings and bonds to current portion	636,675	131,463
Acquisition of right-of-use assets	19,763	1,339

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

38. Contingencies and Commitments

(1) There are no notes provided as collateral as at December 31, 2022.

(2) Commitment contracted with financial institutions

The Group entered into agreements such as bank overdrafts, trade bill discounts, open L/C, general loans and others with financial institutions with a limit of ₩ 2,892,354 million. Also, the Group entered into trade receivables discount agreements with a limit of ₩ 3,150 million as at December 31, 2022.:

The Group must maintain Debt-Equity Ratio under 400% regarding USD 663 million of 1st syndicated loans. For USD 663 million of 1st syndicated loans, the Group has an obligation to supplement the access financing in case of non-compliance with following covenants:

1 st Syndicated loans	Covenants	Year	Ratio
USD 663 million	Maintaining the subsidiary's net debt/EBITDA ratio at the end of each year	2021	4.8:1
		2022	4:1
		2023	3:1
		2024	2:1
		2025	2:1

The Group must maintain Debt-Equity Ratio under 400% regarding USD 215 million of 2st syndicated loans.

2 st Syndicated loans	Covenants	Year	Ratio
USD 215 million	Maintaining the subsidiary's net debt/EBITDA ratio at the end of each year	2022	4:1
		2023	3:1
		2024	2:1
		2025	2:1

The Group must maintain the Parent Company's Debt-Equity Ratio under 400% regarding USD 70 million of other operating funds.

In 2022, regarding USD 878 million of syndicated loans, the Group violated the maintenance of the subsidiaries' net debt/EBITDA ratio as at December 31, 2022, but received the waiver consents from the lender in relation to this violation.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(3) Guarantees provided by others

Details of payment guarantees provided by others as at December 31, 2022, are as follows:

<i>(in millions of Korean won)</i>	Guaranteed amount		Details
Kookmin Bank	₩	39,033	Performance guarantee and others
Woori Bank		38,019	Performance guarantee and others
Shinhan Bank		25,346	Performance guarantee and others
Nonghyup Bank		43,013	Performance guarantee and others
Hana Bank		12,673	Performance guarantee and others
Seoul Guarantee Insurance Company		79,882	Performance guarantee and others
Vietin Bank		1,050	Performance guarantee and others
	₩	239,016	

(4) Assets pledged as collaterals

Details of assets pledged as collaterals as at December 31, 2022, are as follows:

<i>(in millions of Korean won)</i>	Related borrowings		Executed amount of agreement		Provided to
Property, plant and equipment	₩	190,000	₩	420,000	Korea Development Bank
Property, plant and equipment		20,000		84,000	Woori Bank
Property, plant and equipment		20,000		55,000	Shinhan Bank
Property, plant and equipment		94,632		94,632	Vietcom Bank and others
Trade receivables		107,109		107,109	Woori Bank and others
Short-term financial instruments		-		760	Nonghyup Bank and others
Long-term financial instruments		-		1,050	Vietcom Bank
	₩	431,741	₩	762,551	

(5) Pending lawsuits

Details of lawsuits filed against and by the Group as at December 31, 2022, are as follows:

<i>(in millions of Korean won)</i>	Number of cases		Litigation amount		Details
Defendant's case	1	₩	100		Claims for indemnity
Defendant's case	1		51,668		Claims for damages

As at December 31, 2022, the results of the above pending lawsuits cannot be predicted, and accordingly, possible adjustments due to such uncertainty were not reflected on the financial statements of the Group.

Hyosung Chemical Corporation and Subsidiaries

Notes to the Consolidated Financial Statements

December 31, 2022 and 2021

(6) Liability of the Group due to spin-off

The Group spun off by a special resolution of the shareholders in accordance with Paragraph 1 of Article 530-9 of the Commercial Code of Korea. The Group or newly established entity from the spin-off is jointly and severally liable for payables of the Group before the spin-off, in accordance with Paragraph 1 of Article 530-9 of the Commercial Code of Korea.

(7) Purchase agreements of property, plant and equipment

The Group decided to expand the PP polymerization facilities and NF3 Oksan plant in September 2021. Details of purchase agreements of the property, plant, and equipment as at December 31, 2022, are as follows:

<i>(in millions of Korean won)</i>		2022
Contract amount	₩	135,352
Amount paid		116,763
Amount payable		121

(8) Right of pledge

The Group has established a pledge over subordinated securitized bonds amounting to ₩ 1,500 million purchased under the contract conditions of the issuance of 7th private bond for the securitization company.

39. Greenhouse Gas Emission Permits and Obligations

The quantities of emission permits which are allocated free of charge for the 3rd planning period (2022~2025) are as follows.

<i>(in tCO₂-eq)</i>	2022	2023	2024	2025	Total
Allocation with nil consideration	860,616	860,616	852,555	852,555	3,426,342

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

The Group's free allocation of emission rights and the estimated quantity of greenhouse gas emission as at December 31, 2022, are as follows:

<i>(in tCO₂-eq, in millions of Korean won)</i>	2022					
	2021		2022		2023 ~ 2025	
	Quantity	Amount ³	Quantity	Amount ³	Quantity	Amount ³
Beginning balance	-	₩ -	-	₩ -	-	₩ -
Free allocation	860,616	-	860,616	-	2,565,726	-
Additional allocation	3	-	1,829	-	-	-
Provision	-	-	-	-	-	-
Purchases ¹	4,077	54	-	-	-	-
Submission to the government ²	(865,105)	(61)	(873,791)	(182)	-	-
Carryforward	409	7	-	-	-	-
Ending balance	-	₩ -	(11,346)	₩ (182)	2,565,726	₩ -

¹ The actual quantity of emissions purchased is written for 2021. The emission rights purchased by the Group is 4,077 tCO₂-eq for the year ended December 31, 2022.

² The actual quantity of emissions submitted is written for 2021, and the expected quantity of emissions to submit is written for 2022. The expected emissions as at December 31, 2022 is 873,791 tCO₂-eq.

³ The amounts of emission rights purchased are included in other intangible assets.

The Group's free allocation of emission rights and the estimated quantity of greenhouse gas emission as at December 31, 2021, are as follows:

<i>(in tCO₂-eq, in millions of Korean won)</i>	2021					
	2020		2021		2022 ~ 2025	
	Quantity	Amount ³	Quantity	Amount ³	Quantity	Amount ³
Beginning balance	-	₩ -	-	₩ -	-	₩ -
Free allocation	748,305	-	860,616	-	3,426,342	-
Provision	(26,379)	-	-	-	-	-
Purchases ¹	140,000	2,513	-	-	-	-
Submission to the government ²	(861,517)	(2,506)	(863,181)	(7)	-	-
Carryforward	(409)	(7)	409	7	-	-
Ending balance	-	₩ -	(2,156)	₩ -	3,426,342	₩ -

¹ The actual quantity of emissions purchased is written for 2020. The emission rights purchased by the Group is 140,000 tCO₂-eq for the year ended December 31, 2021.

² The actual quantity of emissions submitted is written for 2020, and the expected quantity of emissions to submit is written for 2021. The expected emissions as at December 31, 2021 is 863,181 tCO₂-eq.

³ The amounts of emission rights purchased are included in other intangible assets.

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

Changes in provisions for the year ended December 31, 2022 and 2021, are as follows:

<i>(in millions of Korean won)</i>	2022		2021	
Beginning balance	₩	76	₩	2,960
Profit or loss:				
Additional provisions		106		(2,884)
Used during the year		182		76
Ending balance		(76)		(2,960)
	₩	182	₩	76
Current	₩	182	₩	76
Non-current		-		-

40.Changes in accounting policies – the application of amendments to Korean IFRS 1016 Property, Plant and Equipment - Proceeds before intended use

As explained in Note 2.2.1, the Group has changed its accounting policy to recognize the proceeds from selling items (samples) produced in the process of testing whether the property, plant and equipment is functioning properly and related costs in profit or loss in accordance with the amendments to Korean IFRS 1016. Before applying the amendments, the Group added or deducted the related cost of samples and net proceeds from the cost of property, plant and equipment. In accordance with the transitional provisions, the Group changed its accounting policy only to items of property, plant and equipment that are bought to the location and condition necessary for them to be capable of operating in the manner intended by management on or after January 1, 2021. The financial statements for the 2021 have been restated to reflect the retrospective impact. The effects of the restatement of the financial statements are as follows.

(a) Amounts recognized in the consolidated statement of financial position

<i>(in millions of Korean won)</i>	December 31, 2021			January 1, 2021		
	Before adjustment	Adjusted amount	After adjustment	Before adjustment	Adjusted amount	After adjustment
Property, plant and equipment	₩ 2,188,122	(3,518)	2,184,604	1,923,348	-	1,923,348
Inventories	401,004	(8,636)	392,368	143,162	-	143,162
Retained earnings	138,223	(11,998)	126,225	67,607	-	67,607
Other components of equity	19,583	(156)	19,427	(8,902)	-	(8,902)

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(b) Amounts recognized in the consolidated statement of profit or loss

(in millions of Korean won,
except earnings per share)

	2021		
	Before adjustment	Adjusted amount	After adjustment
Revenue	₩ 2,452,990	₩ 66,975	₩ 2,519,965
Cost of sales	2,203,716	78,973	2,282,689
Gross profit	249,274	(11,998)	237,276
Selling, general and administrative expenses	78,919	-	78,919
Research and development expenses	21,783	-	21,783
Operating profit	148,572	(11,998)	136,574
Other income	7,431	-	7,431
Other expenses	3,067	-	3,067
Finance income	31,026	-	31,026
Finance expenses	69,917	-	69,917
Share of net profit of associates	325	-	325
Profit before income tax	114,370	(11,998)	102,372
Income tax expense	43,956	-	43,956
Profit for the year	₩ 70,414	₩ (11,998)	₩ 58,416
Owners of the Parent Company	70,414	(11,998)	58,416
Non-controlling interests	-	-	-
Earnings per share			
Basic earnings per share	22,158	(3,775)	18,383

Hyosung Chemical Corporation and Subsidiaries
Notes to the Consolidated Financial Statements
December 31, 2022 and 2021

(c) Amounts recognized in the consolidated statement of comprehensive income

(in millions of Korean won,
except earnings per share)

	2021		
	Before adjustment	Adjusted amount	After adjustment
Profit (loss) for the year	₩ 70,414	₩ (11,998)	₩ 58,416
Other comprehensive income	28,688	(156)	28,532
Items that will not be reclassified to profit or loss			
Remeasurements of net defined benefit liabilities	113	-	113
Share of remeasurements of net defined benefit liabilities of associates	144	-	144
Gain on valuation of financial assets at fair value through other comprehensive income	11	-	11
Items that may be subsequently reclassified to profit or loss			
Share of other comprehensive income of associates	295	-	295
Overseas operations translation gain (loss)	28,125	(156)	27,969
Total comprehensive income (loss) for the year	₩ 99,102	₩ (12,154)	₩ 86,948
Owners of the Parent company	99,102	(12,154)	86,948
Non-controlling interest	-	-	-