Form 5500

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Annual Return/Report of Employee Benefit Plan

This form is required to be filed for employee benefit plans under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and sections 6057(b) and 6058(a) of the Internal Revenue Code (the Code).

▶ **Complete all entries in accordance with the instructions to the Form 5500.**

OMB Nos. 1210-0110
1210-0089

2022

This Form is Open to Public Inspection

Part I Annual Report Identification Information

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A This return/report is for:
- [ ] a multiemployer plan
- [ ] a multiple-employer plan (Filers checking this box must attach a list of participating employer information in accordance with the form instructions.)
- [X] a single-employer plan
- [ ] a DFE (specify) ____

B This return/report is:
- [ ] the first return/report
- [ ] the final return/report
- [ ] an amended return/report
- [ ] a short plan year return/report (less than 12 months)

C If the plan is a collectively-bargained plan, check here. . . . . ▶ [ ]

D Check box if filing under:
- [X] Form 5558
- [ ] automatic extension
- [ ] the DFVC program
- [ ] special extension (enter description)

E If this is a retroactively adopted plan permitted by SECURE Act section 201, check here. . . . . ▶ [ ]

Part II Basic Plan Information—enter all requested information

1a Name of plan
MASSMUTUAL THRIFT PLAN

1b Three-digit plan number (PN) ▶ 004

1c Effective date of plan 07/01/1974

2a Plan sponsor's name (employer, if for a single-employer plan)
Mailing address (include room, apt., suite no. and street, or P.O. Box)
City or town, state or province, country, and ZIP or foreign postal code (if foreign, see instructions)
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

1295 STATE STREET, F105
SPRINGFIELD, MA 01111-0001

2b Employer Identification Number (EIN) 04-1590850

2c Plan Sponsor's telephone number 617-695-4607

2d Business code (see instructions) 524140

Caution: A penalty for the late or incomplete filing of this return/report will be assessed unless reasonable cause is established.

Under penalties of perjury and other penalties set forth in the instructions, I declare that I have examined this return/report, including accompanying schedules, statements and attachments, as well as the electronic version of this return/report, and to the best of my knowledge and belief, it is true, correct, and complete.

SIGN HERE	Filed with authorized/valid electronic signature.	10/11/2023	CHARLENE DODD
	Signature of plan administrator	Date	Enter name of individual signing as plan administrator
SIGN HERE			
	Signature of employer/plan sponsor	Date	Enter name of individual signing as employer or plan sponsor
SIGN HERE			
	Signature of DFE	Date	Enter name of individual signing as DFE

3a Plan administrator's name and address ☐ Same as Plan Sponsor

PLAN ADMINISTRATIVE COMMITTEE

1295 STATE STREET, F105
SPRINGFIELD, MA 01111-0001

3b Administrator's EIN: 55-0915954

3c Administrator's telephone number: 413-744-4407

4 If the name and/or EIN of the plan sponsor or the plan name has changed since the last return/report filed for this plan, enter the plan sponsor's name, EIN, the plan name and the plan number from the last return/report:
a Sponsor's name
c Plan Name

4b EIN

4d PN

5 Total number of participants at the beginning of the plan year	**5**	23641
6 Number of participants as of the end of the plan year unless otherwise stated (welfare plans complete only lines **6a(1), 6a(2), 6b, 6c,** and **6d**).		
a(1) Total number of active participants at the beginning of the plan year	**6a(1)**	15229
a(2) Total number of active participants at the end of the plan year	**6a(2)**	14565
b Retired or separated participants receiving benefits	**6b**	822
c Other retired or separated participants entitled to future benefits	**6c**	8191
d Subtotal. Add lines **6a(2)**, **6b**, and **6c**	**6d**	23578
e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits.	**6e**	48
f Total. Add lines **6d** and **6e**	**6f**	23626
g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item)	**6g**	16868
h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	**6h**	236
7 Enter the total number of employers obligated to contribute to the plan (only multiemployer plans complete this item)	**7**	

8a If the plan provides pension benefits, enter the applicable pension feature codes from the List of Plan Characteristics Codes in the instructions:

2J 2K 3H 2F 2G 2E 2S 2T 3F

b If the plan provides welfare benefits, enter the applicable welfare feature codes from the List of Plan Characteristics Codes in the instructions:

9a Plan funding arrangement (check all that apply)

(1)	X	Insurance
(2)		Code section 412(e)(3) insurance contracts
(3)	X	Trust
(4)		General assets of the sponsor

9b Plan benefit arrangement (check all that apply)

(1)	X	Insurance
(2)		Code section 412(e)(3) insurance contracts
(3)	X	Trust
(4)		General assets of the sponsor

10 Check all applicable boxes in 10a and 10b to indicate which schedules are attached, and, where indicated, enter the number attached. (See instructions)

a Pension Schedules

(1)	X	**R** (Retirement Plan Information)
(2)		**MB** (Multiemployer Defined Benefit Plan and Certain Money Purchase Plan Actuarial Information) - signed by the plan actuary
(3)		**SB** (Single-Employer Defined Benefit Plan Actuarial Information) - signed by the plan actuary

b General Schedules

(1)	X		**H** (Financial Information)
(2)			**I** (Financial Information – Small Plan)
(3)	X	6	**A** (Insurance Information)
(4)	X		**C** (Service Provider Information)
(5)	X		**D** (DFE/Participating Plan Information)
(6)			**G** (Financial Transaction Schedules)

Part III Form M-1 Compliance Information (to be completed by welfare benefit plans)

11a If the plan provides welfare benefits, was the plan subject to the Form M-1 filing requirements during the plan year? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

If "Yes" is checked, complete lines 11b and 11c.

11b Is the plan currently in compliance with the Form M-1 filing requirements? (See instructions and 29 CFR 2520.101-2.) ..... ☐ Yes ☐ No

11c Enter the Receipt Confirmation Code for the 2022 Form M-1 annual report. If the plan was not required to file the 2022 Form M-1 annual report, enter the Receipt Confirmation Code for the most recent Form M-1 that was required to be filed under the Form M-1 filing requirements. (Failure to enter a valid Receipt Confirmation Code will subject the Form 5500 filing to rejection as incomplete.)

Receipt Confirmation Code_____

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I **Information Concerning Insurance Contract Coverage, Fees, and Commissions** Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
04-1590850	65935	2942	21	04/01/2022	03/31/2023

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid
38	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

DAVID M BURSTIN
6 PPG PL STE 1150
PITTSBURGH, PA 15222

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	
38			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	141384
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	1912
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. Specify nature of costs ▶	6d	

e Type of contract: (1) [X] individual policies (2) [ ] group deferred annuity
(3) [ ] other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ [ ]

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) [ ] deposit administration (2) [ ] immediate participation guarantee
(3) [ ] guaranteed investment (4) [ ] other ▶

b	Balance at the end of the previous year			7b	
c	Additions: (1) Contributions deposited during the year	7c(1)			
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)			
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below) ▶	7c(5)			
	(6) Total additions			7c(6)	0
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	0
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)			
	(2) Administration charge made by carrier	7e(2)			
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below) ▶	7e(4)			
	(5) Total deductions			7e(5)	0
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	0

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Information Concerning Insurance Contract Coverage, Fees, and Commissions

Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
C.M. LIFE INSURANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
06-1041383	93432	2942B	5	04/01/2022	03/31/2023

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid
430	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

RICHARD C KURIGER
3 GREENWAY PLZ STE 1500
HOUSTON, TX 77046-0314

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	
158			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

LARRY E RICKE
425 BANK ST
NEW ALBANY, IN 47150-3407

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	
107			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

JOHN L ROSENHEIM
101 FEDERAL ST STE 800
BOSTON, MA 02110-1817

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
60			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

BRIAN E CODE
4830 W KENNEDY BLVD STE 875
TAMPA, FL 33609-2576

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
59			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

FREDRIC R HOROWITZ
6 FOUNTAIN TER
SCARSDALE, NY 10583-1412

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
46			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	167648
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	6286
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. Specify nature of costs ▶	6d	

e Type of contract: (1) [X] individual policies (2) [ ] group deferred annuity (3) [ ] other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ [ ]

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) [ ] deposit administration (2) [ ] immediate participation guarantee (3) [ ] guaranteed investment (4) [ ] other ▶

b	Balance at the end of the previous year			7b	
c	Additions: (1) Contributions deposited during the year	7c(1)			
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)			
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below) ▶	7c(5)			
	(6) Total additions			7c(6)	0
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	0
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)			
	(2) Administration charge made by carrier	7e(2)			
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below) ▶	7e(4)			
	(5) Total deductions			7e(5)	0
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	0

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Information Concerning Insurance Contract Coverage, Fees, and Commissions

Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
04-1590850	65935	3318	27	01/01/2022	12/31/2022

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid
625	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

ANDREW D LEE
29 CHANCE ST
DEVENS, MA 01434-5015

(b) Amount of sales and base commissions paid	Fees and other commissions paid		
	(c) Amount	(d) Purpose	(e) Organization code
349			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

LARRY E RICKE
425 BANK ST
NEW ALBANY, IN 47150-3407

(b) Amount of sales and base commissions paid	Fees and other commissions paid		
	(c) Amount	(d) Purpose	(e) Organization code
63			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

STUART R ROMAL

7040 GOLF DR
WHITNEY, TX 76692-9631

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
34			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

HOWARD N BIENENFELD

1000 CORPORATED DR STE 600
FORT LAUDERDALE, FL 33334-3608

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
32			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

STEVEN A HAMILTON

2550 MIDDLE RD STE 204
BETTENDORFT, IA 52722-3286

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
26			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

LARRY M HADDEN

64 N ROUNTREE ST
METTER, GA 30439-4019

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
25			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

MICHAEL A BOOK

90 PARK AVE FL 17
NEW YORK, NY 10016-1373

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
21			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

GREGORY B FALKENBACH
STE 320 3701 CORPORATED PKWY
CENTER VALLEY, PA 18034-8233

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
20			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

MARK J WASIKONIS
3949 S ATHERTON ST
STATE COLLEGE, PA 16801-8308

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
16			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

SANTO M AZZOLINO
6800 JERICHO TPKE STE 202W
SYOSSET, NY 11791-4488

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
15			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

CRAIG L MILLER
924 CENTENNIAL WAY STE 480
LANSING, MI 48917-8247

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
13			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

CAROL L LASEK
1000 CORPORATE DR STE 600
FORT LAUDERDALE, FL 33334-3608

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
11			3

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	1806192
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	21400
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount.	6d	

Specify nature of costs ▶

e Type of contract: (1) [X] individual policies (2) [ ] group deferred annuity

(3) [ ] other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ [ ]

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) [ ] deposit administration (2) [ ] immediate participation guarantee

(3) [ ] guaranteed investment (4) [ ] other ▶

b	Balance at the end of the previous year			7b	
c	Additions: (1) Contributions deposited during the year	7c(1)			
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)			
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below)	7c(5)			
	▶				
	(6) Total additions			7c(6)	0
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	0
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)			
	(2) Administration charge made by carrier	7e(2)			
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below)	7e(4)			
	▶				
	(5) Total deductions			7e(5)	0
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	0

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I **Information Concerning Insurance Contract Coverage, Fees, and Commissions** Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
MML BAYSTATE LIFE INSRUANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
43-0581430	70416	3318VL	1	01/01/2022	12/31/2022

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid
10	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

JOHN CURTIS SKOOG
100 S 5TH ST STE 2300
MINNEAPOLIS, MN 55402-1230

(b) Amount of sales and base commissions paid	Fees and other commissions paid		
	(c) Amount	(d) Purpose	(e) Organization code
5			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

DAVID J MEANS
100 S 5TH ST STE 2300
MINNEAPOLIS, MN 55402-1230

(b) Amount of sales and base commissions paid	Fees and other commissions paid		
	(c) Amount	(d) Purpose	(e) Organization code
3			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

KYLER FLOYD HARDER

STE 320 2 CARLSON PKWY N
PLYMOUTH, MN 55447-4478

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
2			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	6273
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	14333
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. Specify nature of costs ▶	6d	

e Type of contract: (1) [X] individual policies (2) [ ] group deferred annuity (3) [ ] other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ [ ]

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) [ ] deposit administration (2) [ ] immediate participation guarantee (3) [ ] guaranteed investment (4) [ ] other ▶

b	Balance at the end of the previous year			7b	
c	Additions: (1) Contributions deposited during the year	7c(1)			
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)			
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below) ▶	7c(5)			
	(6) Total additions			7c(6)	0
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	0
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)			
	(2) Administration charge made by carrier	7e(2)			
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below) ▶	7e(4)			
	(5) Total deductions			7e(5)	0
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	0

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Information Concerning Insurance Contract Coverage, Fees, and Commissions

Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
C.M. LIFE INSURANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
06-1041383	93432	A230B	8	02/01/2022	01/31/2023

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid
98	0

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

LEONARD J MONTANARI
2ND FLOOR 2 FOREST PARK DR
FARMINGTON, CT 06032-1446

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	
80			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

BAXTER H MAFFETT
FL 3 100 PEARL ST
HARTFORD, CT 06103-4510

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	
9			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

JAMES C ADAMS
2 FOREST PARK DR
FARMINGTON, CT 06032-1445

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	
9			3

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	51811
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	1244
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. Specify nature of costs ▶	6d	

e Type of contract: (1) [X] individual policies (2) [ ] group deferred annuity (3) [ ] other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ [ ]

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) [ ] deposit administration (2) [ ] immediate participation guarantee (3) [ ] guaranteed investment (4) [ ] other ▶

b	Balance at the end of the previous year			7b	
c	Additions: (1) Contributions deposited during the year	7c(1)			
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)			
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below) ▶	7c(5)			
	(6) Total additions			7c(6)	0
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	0
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)			
	(2) Administration charge made by carrier	7e(2)			
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below) ▶	7e(4)			
	(5) Total deductions			7e(5)	0
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	0

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE A (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Insurance Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

▶ Insurance companies are required to provide the information pursuant to ERISA section 103(a)(2).

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I **Information Concerning Insurance Contract Coverage, Fees, and Commissions** Provide information for each contract on a separate Schedule A. Individual contracts grouped as a unit in Parts II and III can be reported on a single Schedule A.

1 Coverage Information:

(a) Name of insurance carrier
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

(b) EIN	(c) NAIC code	(d) Contract or identification number	(e) Approximate number of persons covered at end of policy or contract year	Policy or contract year	
				(f) From	(g) To
04-1590850	65935	SF 1550-1	7847	01/01/2022	12/31/2022

2 Insurance fee and commission information. Enter the total fees and total commissions paid. List in line 3 the agents, brokers, and other persons in descending order of the amount paid.

(a) Total amount of commissions paid	(b) Total amount of fees paid

3 Persons receiving commissions and fees. (Complete as many entries as needed to report all persons).

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		(e) Organization code
	(c) Amount	(d) Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

(a) Name and address of the agent, broker, or other person to whom commissions or fees were paid

(b) Amount of sales and base commissions paid	Fees and other commissions paid		**(e)** Organization code
	(c) Amount	**(d)** Purpose	

Part II Investment and Annuity Contract Information

Where individual contracts are provided, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

4	Current value of plan's interest under this contract in the general account at year end	4	1134033643
5	Current value of plan's interest under this contract in separate accounts at year end	5	

6 Contracts With Allocated Funds:

a State the basis of premium rates ▶

b	Premiums paid to carrier	6b	
c	Premiums due but unpaid at the end of the year	6c	
d	If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, enter amount. Specify nature of costs ▶	6d	

e Type of contract: (1) ☐ individual policies (2) ☐ group deferred annuity (3) ☐ other (specify) ▶

f If contract purchased, in whole or in part, to distribute benefits from a terminating plan, check here ▶ ☐

7 Contracts With Unallocated Funds (Do not include portions of these contracts maintained in separate accounts)

a Type of contract: (1) ☐ deposit administration (2) ☐ immediate participation guarantee (3) ☐ guaranteed investment (4) ☒ other ▶ GROUP ANNUITY CONTRACT

b	Balance at the end of the previous year			7b	1136853880
c	Additions: (1) Contributions deposited during the year	7c(1)	29069749		
	(2) Dividends and credits	7c(2)			
	(3) Interest credited during the year	7c(3)	34192519		
	(4) Transferred from separate account	7c(4)			
	(5) Other (specify below)	7c(5)	41463006		
	▶ NET XFER FR OTHER FUNDS AND LOAN INT				
	(6) Total additions			7c(6)	104725274
d	Total of balance and additions (add lines **7b** and **7c(6)**)			7d	1241579154
e	Deductions:				
	(1) Disbursed from fund to pay benefits or purchase annuities during year	7e(1)	107434360		
	(2) Administration charge made by carrier	7e(2)	111151		
	(3) Transferred to separate account	7e(3)			
	(4) Other (specify below)	7e(4)			
	▶				
	(5) Total deductions			7e(5)	107545511
f	Balance at the end of the current year (subtract line **7e(5)** from line **7d**)			7f	1134033643

Part III Welfare Benefit Contract Information

If more than one contract covers the same group of employees of the same employer(s) or members of the same employee organizations(s), the information may be combined for reporting purposes if such contracts are experience-rated as a unit. Where contracts cover individual employees, the entire group of such individual contracts with each carrier may be treated as a unit for purposes of this report.

8 Benefit and contract type (check all applicable boxes)

- **a** ☐ Health (other than dental or vision)
- **b** ☐ Dental
- **c** ☐ Vision
- **d** ☐ Life insurance
- **e** ☐ Temporary disability (accident and sickness)
- **f** ☐ Long-term disability
- **g** ☐ Supplemental unemployment
- **h** ☐ Prescription drug
- **i** ☐ Stop loss (large deductible)
- **j** ☐ HMO contract
- **k** ☐ PPO contract
- **l** ☐ Indemnity contract
- **m** ☐ Other (specify) ▶

9 Experience-rated contracts:				
a Premiums: (1) Amount received	**9a(1)**			
(2) Increase (decrease) in amount due but unpaid	**9a(2)**			
(3) Increase (decrease) in unearned premium reserve	**9a(3)**			
(4) Earned (**(1)** + **(2)** - **(3)**)			**9a(4)**	0
b Benefit charges (1) Claims paid	**9b(1)**			
(2) Increase (decrease) in claim reserves	**9b(2)**			
(3) Incurred claims (add **(1)** and **(2)**)			**9b(3)**	0
(4) Claims charged			**9b(4)**	
c Remainder of premium: (1) Retention charges (on an accrual basis) --				
(A) Commissions	**9c(1)(A)**			
(B) Administrative service or other fees	**9c(1)(B)**			
(C) Other specific acquisition costs	**9c(1)(C)**			
(D) Other expenses	**9c(1)(D)**			
(E) Taxes	**9c(1)(E)**			
(F) Charges for risks or other contingencies	**9c(1)(F)**			
(G) Other retention charges	**9c(1)(G)**			
(H) Total retention			**9c(1)(H)**	0
(2) Dividends or retroactive rate refunds. (These amounts were ☐ paid in cash, or ☐ credited.)			**9c(2)**	
d Status of policyholder reserves at end of year: (1) Amount held to provide benefits after retirement			**9d(1)**	
(2) Claim reserves			**9d(2)**	
(3) Other reserves			**9d(3)**	
e Dividends or retroactive rate refunds due. (Do not include amount entered in line **9c(2)**.)			**9e**	
10 Nonexperience-rated contracts:				
a Total premiums or subscription charges paid to carrier			**10a**	
b If the carrier, service, or other organization incurred any specific costs in connection with the acquisition or retention of the contract or policy, other than reported in Part I, line 2 above, report amount.			**10b**	

Specify nature of costs.

Part IV Provision of Information

11 Did the insurance company fail to provide any information necessary to complete Schedule A? ☐ Yes ☒ No

12 If the answer to line 11 is "Yes," specify the information not provided. ▶

SCHEDULE C (Form 5500)	Service Provider Information	OMB No. 1210-0110
Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation	This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA). ▶ **File as an attachment to Form 5500.**	**2022** **This Form is Open to Public Inspection.**

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Service Provider Information (see instructions)

You must complete this Part, in accordance with the instructions, to report the information required for **each person** who received, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of monetary value) in connection with services rendered to the plan or the person's position with the plan during the plan year. If a person received **only** eligible indirect compensation for which the plan received the required disclosures, you are required to answer line 1 but are not required to include that person when completing the remainder of this Part.

1 Information on Persons Receiving Only Eligible Indirect Compensation

a Check "Yes" or "No" to indicate whether you are excluding a person from the remainder of this Part because they received only eligible indirect compensation for which the plan received the required disclosures (see instructions for definitions and conditions).. . . . . [X] Yes [ ] No

b If you answered line 1a "Yes," enter the name and EIN or address of each person providing the required disclosures for the service providers who received only eligible indirect compensation. Complete as many entries as needed (see instructions).

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

FID INV INST OPS

04-2647786

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

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(b) Enter name and EIN or address of person who provided you disclosures on eligible indirect compensation

2. Information on Other Service Providers Receiving Direct or Indirect Compensation. Except for those persons for whom you answered "Yes" to line 1a above, complete as many entries as needed to list each person receiving, directly or indirectly, $5,000 or more in total compensation (i.e., money or anything else of value) in connection with services rendered to the plan or their position with the plan during the plan year. (See instructions).

(a) Enter name and EIN or address (see instructions)

FID INV INST OPS

04-2647786

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
37 64 65	RECORDKEEPER	353797	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

MASSACHUSETTS MUTUAL LIFE INSURANCE

04-1590850

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
62 64	SERVICE PROVIDER	342349	Yes [ ] No [X]	Yes [ ] No [ ]		Yes [ ] No [ ]

(a) Enter name and EIN or address (see instructions)

(b) Service Code(s)	(c) Relationship to employer, employee organization, or person known to be a party-in-interest	(d) Enter direct compensation paid by the plan. If none, enter -0-.	(e) Did service provider receive indirect compensation? (sources other than plan or plan sponsor)	(f) Did indirect compensation include eligible indirect compensation, for which the plan received the required disclosures?	(g) Enter total indirect compensation received by service provider excluding eligible indirect compensation for which you answered "Yes" to element (f). If none, enter -0-.	(h) Did the service provider give you a formula instead of an amount or estimated amount?
			Yes [ ] No [ ]	Yes [ ] No [ ]		Yes [ ] No [ ]

Part I Service Provider Information (continued)

3. If you reported on line 2 receipt of indirect compensation, other than eligible indirect compensation, by a service provider, and the service provider is a fiduciary or provides contract administrator, consulting, custodial, investment advisory, investment management, broker, or recordkeeping services, answer the following questions for (a) each source from whom the service provider received $1,000 or more in indirect compensation and (b) each source for whom the service provider gave you a formula used to determine the indirect compensation instead of an amount or estimated amount of the indirect compensation. Complete as many entries as needed to report the required information for each source.

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

(a) Enter service provider name as it appears on line 2	**(b)** Service Codes (see instructions)	**(c)** Enter amount of indirect compensation
(d) Enter name and EIN (address) of source of indirect compensation	**(e)** Describe the indirect compensation, including any formula used to determine the service provider's eligibility for or the amount of the indirect compensation.	

Part II Service Providers Who Fail or Refuse to Provide Information

4 Provide, to the extent possible, the following information for each service provider who failed or refused to provide the information necessary to complete this Schedule.

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

(a) Enter name and EIN or address of service provider (see instructions)	**(b)** Nature of Service Code(s)	**(c)** Describe the information that the service provider failed or refused to provide

Part III Termination Information on Accountants and Enrolled Actuaries (see instructions)

(complete as many entries as needed)

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

a Name:	**b** EIN:
c Position:	
d Address:	**e** Telephone:

Explanation:

SCHEDULE D (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

DFE/Participating Plan Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2022

This Form is Open to Public Inspection.

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan or DFE sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I **Information on interests in MTIAs, CCTs, PSAs, and 103-12 IEs (to be completed by plans and DFEs)**
(Complete as many entries as needed to report all interests in DFEs)

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CHX (INTL GROWTH)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CJN (COMMODITY RL RTN STRAT)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CKD (BLUE CHIP GROWTH)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-CMG (REAL ESTATE)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-ED (CORE BOND)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-EV (HIGH YIELD)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-IA (SMALL CAP GROWTH EQTY)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCD (TARGET RETIREMENT INCOME)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCF (TARGET RETIREMENT 2015)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCG (TARGET RETIREMENT 2020)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCH (TARGET RETIREMENT 2025)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCI (TARGET RETIREMENT 2030)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCJ (TARGET RETIREMENT 2035)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCK (TARGET RETIREMENT 2040)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCL (TARGET RETIREMENT 2045)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCM (TARGET RETIREMENT 2050)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCN (TARGET RETIREMENT 2055)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JCO (TARGET RETIREMENT 2060)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JG4 (TOTL BND MRKT INDX)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JG5 (TOT INTL STK IDX)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-JRY (TARGET RETIREMENT 2065)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-KY (FUNDAMENTAL VALUE)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-QY (STRATEGC EMRG MRKTS)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-SM (INFL-PROT AND INC)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0779283-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-TA (EQUITY OPPORTUNITIES)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-UH (MID CAP GROWTH)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: SIA-UY (SMALL COMPANY VALUE)

b Name of sponsor of entity listed in (a): MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)
90-0342299-000	P	0

a Name of MTIA, CCT, PSA, or 103-12 IE: MASSMUTUAL DEFINDED CONTRIB PLAN MT

b Name of sponsor of entity listed in (a): MASSMUTUAL LIFE INSURANCE COMPANY

c EIN-PN 93-1996039-001	**d** Entity code M	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions) 2390399852

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

a Name of MTIA, CCT, PSA, or 103-12 IE:

b Name of sponsor of entity listed in (a):

c EIN-PN	**d** Entity code	**e** Dollar value of interest in MTIA, CCT, PSA, or 103-12 IE at end of year (see instructions)

Part II Information on Participating Plans (to be completed by DFEs)

(Complete as many entries as needed to report all participating plans)

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

a Plan name

b Name of plan sponsor	**c** EIN-PN

SCHEDULE H (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Financial Information

This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA), and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2022

This Form is Open to Public Inspection

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Asset and Liability Statement

1 Current value of plan assets and liabilities at the beginning and end of the plan year. Combine the value of plan assets held in more than one trust. Report the value of the plan's interest in a commingled fund containing the assets of more than one plan on a line-by-line basis unless the value is reportable on lines 1c(9) through 1c(14). Do not enter the value of that portion of an insurance contract which guarantees, during this plan year, to pay a specific dollar benefit at a future date. **Round off amounts to the nearest dollar.** MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 1b(1), 1b(2), 1c(8), 1g, 1h, and 1i. CCTs, PSAs, and 103-12 IEs also do not complete lines 1d and 1e. See instructions.

Assets		(a) Beginning of Year	(b) End of Year
a Total noninterest-bearing cash	1a		
b Receivables (less allowance for doubtful accounts):			
(1) Employer contributions	1b(1)		
(2) Participant contributions	1b(2)		
(3) Other	1b(3)		
c General investments:			
(1) Interest-bearing cash (include money market accounts & certificates of deposit)	1c(1)		
(2) U.S. Government securities	1c(2)		
(3) Corporate debt instruments (other than employer securities):			
(A) Preferred	1c(3)(A)		
(B) All other	1c(3)(B)		
(4) Corporate stocks (other than employer securities):			
(A) Preferred	1c(4)(A)		
(B) Common	1c(4)(B)		
(5) Partnership/joint venture interests	1c(5)		
(6) Real estate (other than employer real property)	1c(6)		
(7) Loans (other than to participants)	1c(7)		
(8) Participant loans	1c(8)	25075234	23668387
(9) Value of interest in common/collective trusts	1c(9)		
(10) Value of interest in pooled separate accounts	1c(10)		
(11) Value of interest in master trust investment accounts	1c(11)	0	2390399852
(12) Value of interest in 103-12 investment entities	1c(12)		
(13) Value of interest in registered investment companies (e.g., mutual funds)	1c(13)	2245431369	0
(14) Value of funds held in insurance company general account (unallocated contracts)	1c(14)	1136853880	1134033643
(15) Other	1c(15)	718172389	2173309

		(a) Beginning of Year	(b) End of Year
1d Employer-related investments:			
(1) Employer securities	1d(1)		
(2) Employer real property	1d(2)		
e Buildings and other property used in plan operation	1e		
f Total assets (add all amounts in lines 1a through 1e)	1f	4125532872	3550275191
Liabilities			
g Benefit claims payable	1g		
h Operating payables	1h		
i Acquisition indebtedness	1i		
j Other liabilities	1j		
k Total liabilities (add all amounts in lines 1g through1j)	1k	0	0
Net Assets			
l Net assets (subtract line 1k from line 1f)	1l	4125532872	3550275191

Part II Income and Expense Statement

2 Plan income, expenses, and changes in net assets for the year. Include all income and expenses of the plan, including any trust(s) or separately maintained fund(s) and any payments/receipts to/from insurance carriers. Round off amounts to the nearest dollar. MTIAs, CCTs, PSAs, and 103-12 IEs do not complete lines 2a, 2b(1)(E), 2e, 2f, and 2g.

Income		(a) Amount	(b) Total
a Contributions:			
(1) Received or receivable in cash from: **(A)** Employers	2a(1)(A)	60202486	
(B) Participants	2a(1)(B)	133050605	
(C) Others (including rollovers)	2a(1)(C)	36993282	
(2) Noncash contributions	2a(2)		
(3) Total contributions. Add lines **2a(1)(A), (B), (C),** and line **2a(2)**	2a(3)		230246373
b Earnings on investments:			
(1) Interest:			
(A) Interest-bearing cash (including money market accounts and certificates of deposit)	2b(1)(A)		
(B) U.S. Government securities	2b(1)(B)		
(C) Corporate debt instruments	2b(1)(C)		
(D) Loans (other than to participants)	2b(1)(D)		
(E) Participant loans	2b(1)(E)	1294359	
(F) Other	2b(1)(F)	34192519	
(G) Total interest. Add lines **2b(1)(A)** through **(F)**	2b(1)(G)		35486878
(2) Dividends: **(A)** Preferred stock	2b(2)(A)		
(B) Common stock	2b(2)(B)		
(C) Registered investment company shares (e.g. mutual funds)	2b(2)(C)		
(D) Total dividends. Add lines **2b(2)(A)**, **(B)**, and **(C)**	2b(2)(D)		0
(3) Rents	2b(3)		
(4) Net gain (loss) on sale of assets: **(A)** Aggregate proceeds	2b(4)(A)		
(B) Aggregate carrying amount (see instructions)	2b(4)(B)		
(C) Subtract line **2b(4)(B)** from line **2b(4)(A)** and enter result	2b(4)(C)		0
(5) Unrealized appreciation (depreciation) of assets: **(A)** Real estate	2b(5)(A)		
(B) Other	2b(5)(B)		
(C) Total unrealized appreciation of assets. Add lines **2b(5)(A)** and **(B)**	2b(5)(C)		0

		(a) Amount	(b) Total
(6) Net investment gain (loss) from common/collective trusts	2b(6)		
(7) Net investment gain (loss) from pooled separate accounts	2b(7)		
(8) Net investment gain (loss) from master trust investment accounts	2b(8)		-115902926
(9) Net investment gain (loss) from 103-12 investment entities	2b(9)		
(10) Net investment gain (loss) from registered investment companies (e.g., mutual funds)	2b(10)		-340851999
c Other income	2c		-109469160
d Total income. Add all **income** amounts in column (b) and enter total	2d		-300490834
Expenses			
e Benefit payment and payments to provide benefits:			
(1) Directly to participants or beneficiaries, including direct rollovers	2e(1)	274070701	
(2) To insurance carriers for the provision of benefits	2e(2)		
(3) Other	2e(3)		
(4) Total benefit payments. Add lines **2e(1)** through **(3)**	2e(4)		274070701
f Corrective distributions (see instructions)	2f		
g Certain deemed distributions of participant loans (see instructions)	2g		
h Interest expense	2h		
i Administrative expenses: (1) Professional fees	2i(1)		
(2) Contract administrator fees	2i(2)		
(3) Investment advisory and management fees	2i(3)		
(4) Other	2i(4)	696146	
(5) Total administrative expenses. Add lines **2i(1)** through **(4)**	2i(5)		696146
j Total expenses. Add all **expense** amounts in column (b) and enter total	2j		274766847
Net Income and Reconciliation			
k Net income (loss). Subtract line **2j** from line **2d**	2k		-575257681
l Transfers of assets:			
(1) To this plan	2l(1)		
(2) From this plan	2l(2)		

Part III Accountant's Opinion

3 Complete lines 3a through 3c if the opinion of an independent qualified public accountant is attached to this Form 5500. Complete line 3d if an opinion is not attached.

a The attached opinion of an independent qualified public accountant for this plan is (see instructions):

(1) [X] Unmodified **(2)** [ ] Qualified **(3)** [ ] Disclaimer **(4)** [ ] Adverse

b Check the appropriate box(es) to indicate whether the IQPA performed an ERISA section 103(a)(3)(C) audit. Check both boxes (1) and (2) if the audit was performed pursuant to both 29 CFR 2520.103-8 and 29 CFR 2520.103-12(d). Check box (3) if pursuant to neither.

(1) [ ] DOL Regulation 2520.103-8 **(2)** [ ] DOL Regulation 2520.103-12(d) **(3)** [X] neither DOL Regulation 2520.103-8 nor DOL Regulation 2520.103-12(d).

c Enter the name and EIN of the accountant (or accounting firm) below:

(1) Name: KPMG, LLP **(2)** EIN: 13-5565207

d The opinion of an independent qualified public accountant is **not attached** because:

(1) [ ] This form is filed for a CCT, PSA, or MTIA. **(2)** [ ] It will be attached to the next Form 5500 pursuant to 29 CFR 2520.104-50.

Part IV Compliance Questions

4 CCTs and PSAs do not complete Part IV. MTIAs, 103-12 IEs, and GIAs do not complete lines 4a, 4e, 4f, 4g, 4h, 4k, 4m, 4n, or 5. 103-12 IEs also do not complete lines 4j and 4l. MTIAs also do not complete line 4l.

During the plan year:

		Yes	No	Amount
a Was there a failure to transmit to the plan any participant contributions within the time period described in 29 CFR 2510.3-102? Continue to answer "Yes" for any prior year failures until fully corrected. (See instructions and DOL's Voluntary Fiduciary Correction Program.)	4a	X		9833739

		Yes	No	Amount
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of the plan year or classified during the year as uncollectible? Disregard participant loans secured by participant's account balance. (Attach Schedule G (Form 5500) Part I if "Yes" is checked.)	4b		X	
c Were any leases to which the plan was a party in default or classified during the year as uncollectible? (Attach Schedule G (Form 5500) Part II if "Yes" is checked.)	4c		X	
d Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a. Attach Schedule G (Form 5500) Part III if "Yes" is checked.)	4d		X	
e Was this plan covered by a fidelity bond?	4e	X		100000000
f Did the plan have a loss, whether or not reimbursed by the plan's fidelity bond, that was caused by fraud or dishonesty?	4f		X	
g Did the plan hold any assets whose current value was neither readily determinable on an established market nor set by an independent third party appraiser?	4g		X	
h Did the plan receive any noncash contributions whose value was neither readily determinable on an established market nor set by an independent third party appraiser?	4h		X	
i Did the plan have assets held for investment? (Attach schedule(s) of assets if "Yes" is checked, and see instructions for format requirements.)	4i	X		
j Were any plan transactions or series of transactions in excess of 5% of the current value of plan assets? (Attach schedule of transactions if "Yes" is checked and see instructions for format requirements.)	4j		X	
k Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?	4k		X	
l Has the plan failed to provide any benefit when due under the plan?	4l		X	
m If this is an individual account plan, was there a blackout period? (See instructions and 29 CFR 2520.101-3.)	4m		X	
n If 4m was answered "Yes," check the "Yes" box if you either provided the required notice or one of the exceptions to providing the notice applied under 29 CFR 2520.101-3.	4n			

5a Has a resolution to terminate the plan been adopted during the plan year or any prior plan year? ☐ Yes ☒ No
If "Yes," enter the amount of any plan assets that reverted to the employer this year _____.

5b If, during this plan year, any assets or liabilities were transferred from this plan to another plan(s), identify the plan(s) to which assets or liabilities were transferred. (See instructions.)

5b(1) Name of plan(s)	**5b(2)** EIN(s)	**5b(3)** PN(s)

5c Was the plan a defined benefit plan covered under the PBGC insurance program at any time during this plan year? (See ERISA section 4021 and instructions.) ☐ Yes ☐ No ☐ Not determined
If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year _____.

SCHEDULE R (Form 5500)

Department of the Treasury
Internal Revenue Service

Department of Labor
Employee Benefits Security Administration

Pension Benefit Guaranty Corporation

Retirement Plan Information

This schedule is required to be filed under sections 104 and 4065 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6058(a) of the Internal Revenue Code (the Code).

▶ **File as an attachment to Form 5500.**

OMB No. 1210-0110

2022

This Form is Open to Public Inspection.

For calendar plan year 2022 or fiscal plan year beginning 01/01/2022 and ending 12/31/2022

A Name of plan
MASSMUTUAL THRIFT PLAN

B Three-digit plan number (PN) ▶ 004

C Plan sponsor's name as shown on line 2a of Form 5500
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY

D Employer Identification Number (EIN)
04-1590850

Part I Distributions

All references to distributions relate only to payments of benefits during the plan year.

1 Total value of distributions paid in property other than in cash or the forms of property specified in the instructions **1** 0

2 Enter the EIN(s) of payor(s) who paid benefits on behalf of the plan to participants or beneficiaries during the year (if more than two, enter EINs of the two payors who paid the greatest dollar amounts of benefits):

EIN(s): 04-6568107

Profit-sharing plans, ESOPs, and stock bonus plans, skip line 3.

3 Number of participants (living or deceased) whose benefits were distributed in a single sum, during the plan year **3**

Part II Funding Information (If the plan is not subject to the minimum funding requirements of section 412 of the Internal Revenue Code or ERISA section 302, skip this Part.)

4 Is the plan administrator making an election under Code section 412(d)(2) or ERISA section 302(d)(2)? ..... ☐ **Yes** ☐ **No** ☒ **N/A**

If the plan is a defined benefit plan, go to line 8.

5 If a waiver of the minimum funding standard for a prior year is being amortized in this plan year, see instructions and enter the date of the ruling letter granting the waiver. **Date:** Month _____ Day _____ Year _____

If you completed line 5, complete lines 3, 9, and 10 of Schedule MB and do not complete the remainder of this schedule.

6 a Enter the minimum required contribution for this plan year (include any prior year accumulated funding deficiency not waived) **6a**

b Enter the amount contributed by the employer to the plan for this plan year **6b**

c Subtract the amount in line 6b from the amount in line 6a. Enter the result (enter a minus sign to the left of a negative amount) **6c**

If you completed line 6c, skip lines 8 and 9.

7 Will the minimum funding amount reported on line 6c be met by the funding deadline? ..... ☐ **Yes** ☐ **No** ☐ **N/A**

8 If a change in actuarial cost method was made for this plan year pursuant to a revenue procedure or other authority providing automatic approval for the change or a class ruling letter, does the plan sponsor or plan administrator agree with the change? ..... ☐ **Yes** ☐ **No** ☒ **N/A**

Part III Amendments

9 If this is a defined benefit pension plan, were any amendments adopted during this plan year that increased or decreased the value of benefits? If yes, check the appropriate box. If no, check the "No" box. ..... ☐ **Increase** ☐ **Decrease** ☐ **Both** ☐ **No**

Part IV ESOPs (see instructions). If this is not a plan described under section 409(a) or 4975(e)(7) of the Internal Revenue Code, skip this Part.

10 Were unallocated employer securities or proceeds from the sale of unallocated securities used to repay any exempt loan? ..... ☐ **Yes** ☐ **No**

11 a Does the ESOP hold any preferred stock? ..... ☐ **Yes** ☐ **No**

b If the ESOP has an outstanding exempt loan with the employer as lender, is such loan part of a "back-to-back" loan? (See instructions for definition of "back-to-back" loan.) ..... ☐ **Yes** ☐ **No**

12 Does the ESOP hold any stock that is not readily tradable on an established securities market? ..... ☐ **Yes** ☐ **No**

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that (1) contributed more than 5% of total contributions to the plan during the plan year or (2) was one of the top-ten highest contributors (measured in dollars). See instructions. *Complete as many entries as needed to report all applicable employers.*

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify):

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

---

a Name of contributing employer

b EIN **c** Dollar amount contributed by employer

d Date collective bargaining agreement expires *(If employer contributes under more than one collective bargaining agreement, check box* ☐ *and see instructions regarding required attachment. Otherwise, enter the applicable date.)* Month _____ Day _____ Year _____

e Contribution rate information *(If more than one rate applies, check this box* ☐ *and see instructions regarding required attachment. Otherwise, complete lines 13e(1) and 13e(2).)*
(1) Contribution rate (in dollars and cents) _____
(2) Base unit measure: ☐ Hourly ☐ Weekly ☐ Unit of production ☐ Other (specify): _____

14 Enter the number of deferred vested and retired participants (inactive participants), as of the beginning of the plan year, whose contributing employer is no longer making contributions to the plan for:

a The current plan year. Check the box to indicate the counting method used to determine the number of inactive participants: ☐ last contributing employer ☐ alternative ☐ reasonable approximation (see instructions for required attachment)	**14a**	
b The plan year immediately preceding the current plan year. ☐ Check the box if the number reported is a change from what was previously reported (see instructions for required attachment)	**14b**	
c The second preceding plan year. ☐ Check the box if the number reported is a change from what was previously reported (see instructions for required attachment)	**14c**	

15 Enter the ratio of the number of participants under the plan on whose behalf no employer had an obligation to make an employer contribution during the current plan year to:

a The corresponding number for the plan year immediately preceding the current plan year	**15a**	
b The corresponding number for the second preceding plan year	**15b**	

16 Information with respect to any employers who withdrew from the plan during the preceding plan year:

a Enter the number of employers who withdrew during the preceding plan year	**16a**	
b If line 16a is greater than 0, enter the aggregate amount of withdrawal liability assessed or estimated to be assessed against such withdrawn employers	**16b**	

17 If assets and liabilities from another plan have been transferred to or merged with this plan during the plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

Part VI Additional Information for Single-Employer and Multiemployer Defined Benefit Pension Plans

18 If any liabilities to participants or their beneficiaries under the plan as of the end of the plan year consist (in whole or in part) of liabilities to such participants and beneficiaries under two or more pension plans as of immediately before such plan year, check box and see instructions regarding supplemental information to be included as an attachment ☐

19 If the total number of participants is 1,000 or more, complete lines (a) through (c)

a Enter the percentage of plan assets held as:
Stock: _____% Investment-Grade Debt: _____% High-Yield Debt: _____% Real Estate: _____% Other: _____%

b Provide the average duration of the combined investment-grade and high-yield debt:
☐ 0-3 years ☐ 3-6 years ☐ 6-9 years ☐ 9-12 years ☐ 12-15 years ☐ 15-18 years ☐ 18-21 years ☐ 21 years or more

c What duration measure was used to calculate line 19(b)?
☐ Effective duration ☐ Macaulay duration ☐ Modified duration ☐ Other (specify):

20 **PBGC missed contribution reporting requirements.** If this is a multiemployer plan or a single-employer plan that is not covered by PBGC, skip line 20.

a Is the amount of unpaid minimum required contributions for all years from Schedule SB (Form 5500) line 40 greater than zero? ☐ Yes ☐ No

b If line 20a is "Yes," has PBGC been notified as required by ERISA sections 4043(c)(5) and/or 303(k)(4)? Check the applicable box:

☐ Yes.

☐ No. Reporting was waived under 29 CFR 4043.25(c)(2) because contributions equal to or exceeding the unpaid minimum required contribution were made by the 30th day after the due date.

☐ No. The 30-day period referenced in 29 CFR 4043.25(c)(2) has not yet ended, and the sponsor intends to make a contribution equal to or exceeding the unpaid minimum required contribution by the 30th day after the due date.

☐ No. Other. Provide explanation_____

MASSMUTUAL THRIFT PLAN

Financial Statements and Supplemental Schedule

(Modified Cash Basis)

December 31, 2022 and 2021

MASSMUTUAL THRIFT PLAN

FINANCIAL STATEMENTS AND SUPPLEMENTAL SCHEDULE

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Note: Schedules of reportable transactions related to investment assets both acquired and disposed of with the plan year, loans or fixed income obligations in default or classified as uncollectible, and leases in default or classified as uncollectible as required by Section 103(b)(3) of the Employee Retirement Income Security Act of 1974 (ERISA) are not applicable.

KPMG LLP
One Financial Plaza
755 Main Street
Hartford, CT 06103

Independent Auditors' Report

The Plan Administrator and Plan Participants
MassMutual Thrift Plan

Opinion

We have audited the financial statements of MassMutual Thrift Plan (the Plan), an employee benefit plan subject to the Employee Retirement Income Security Act of 1974 (ERISA), which comprise the statements of net assets available for benefits (modified cash basis) as of December 31, 2022 and 2021, and the related statement of changes in net assets available for benefits (modified cash basis) for the year ended December 31, 2022, and the related notes to the financial statements.

In our opinion, the accompanying financial statements present fairly, in all material respects, the net assets available for benefits of the Plan (modified cash basis) as of December 31, 2022 and 2021, and the changes in its net assets available for benefits (modified cash basis) for the year ended December 31, 2022, in accordance with the modified cash basis of accounting described in Note 2.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Plan and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Emphasis of Matter – Basis of Accounting

We draw attention to Note 2 to the financial statements, which describes the basis of accounting. The financial statements are prepared on the modified cash basis of accounting, which is a basis of accounting other than U.S. generally accepted accounting principles. Our opinion is not modified with respect to this matter.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with the modified cash basis of accounting described in Note 2, and for determining that the modified cash basis of accounting is an acceptable basis for the preparation of the financial statements in the circumstances. Management is also responsible for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Management is also responsible for maintaining a current plan instrument, including all plan amendments, administering the Plan, and determining that the Plan's transactions that are presented and disclosed in the financial statements are in conformity with the Plan's provisions, including maintaining sufficient records with respect to each of the participants, to determine the benefits due or which may become due to such participants.

KPMG LLP, a Delaware limited liability partnership and a member firm of the KPMG global organization of independent member firms affiliated with KPMG International Limited, a private English company limited by guarantee.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. 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. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- 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 Plan's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Plan's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Supplemental Schedules Required by ERISA

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The supplemental schedules (modified cash basis) of Schedule H, Part IV, Line 4a – Schedule of Delinquent Participant Contributions for the year ended December 31, 2022 and Schedule H, Part IV, Line 4i – Schedule of Assets (Held at End of Year) are presented for purposes of additional analysis and are not a required part of the financial statements but are supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with GAAS.

In forming our opinion on the supplemental schedules (modified cash basis), we evaluated whether the supplemental schedules (modified cash basis), including their form and content, are presented in conformity with the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA.

In our opinion, the information in the accompanying schedules (modified cash basis) is fairly stated, in all material respects, in relation to the financial statements as a whole, and the form and content is presented in conformity with the Department of Labor's Rules and Regulations for Reporting and Disclosure under ERISA.

KPMG LLP

Hartford, Connecticut
October 10, 2023

MASSMUTUAL THRIFT PLAN
Statements of Net Assets Available for Benefits (Modified Cash Basis)
As of December 31, 2022 and 2021

	As of December 31, 2022	2021
	(In thousands)	
Assets:		
Investments at fair value:		
Investment in MassMutual Defined Contribution Plan Master Trust	$ 2,390,400	$ -
Pooled separate investment accounts	-	2,245,431
Non-pooled separate investment accounts	-	716,276
Life insurance policies (Note 4)	2,173	1,897
Total investments at fair value	2,392,573	2,963,604
Investment at contract value	1,134,034	1,136,854
Notes receivable from participants held in MassMutual Defined Contribution Plan Master Trust	23,668	-
Notes receivable from participants	-	25,075
Net assets available for benefits	$ 3,550,275	$ 4,125,533

See accompanying notes to the financial statements

MASSMUTUAL THRIFT PLAN
Statement of Changes in Net Assets Available for Benefits (Modified Cash Basis)
For the Year Ended December 31, 2022

	Year Ended December 31, 2022
	(In thousands)
Additions:	
Investment income (loss):	
Plan's interest in MassMutual Defined Contribution Plan Master Trust	$ (115,903)
Net depreciation in fair value of investments	(450,599)
Interest income on investment contract	34,193
Net appreciation and net cash flows for life insurance policies	34
Net investment loss	(532,275)
Plan's interest in MassMutual Defined Contribution Plan Master Trust interest income on notes receivable from participants	776
Interest income on notes receivable from participants	519
Contributions:	
Participant	133,051
Company	60,202
Rollovers	36,993
Total contributions	230,246
Other	243
Total additions (deductions)	(300,491)
Deductions:	
Benefits paid	274,071
Administrative expenses	696
Total deductions	274,767
Net decrease in net assets available for benefits	(575,258)
Net assets available for benefits:	
Beginning of year	4,125,533
End of year	$ 3,550,275

See accompanying notes to the financial statements

1. Description of Plan

The following is a brief description of the MassMutual Thrift Plan (the Plan) provided for general information purposes only. The plan document should be consulted for a more complete description of the Plan's provisions.

a. General

The Plan is a long-term savings and investment defined contribution plan, which offers participating employees and active career contract agents certain tax deferral advantages including a 401(k) account. The following individuals may participate if they meet certain eligibility requirements: (1) any employee of Massachusetts Mutual Life Insurance Company (the Company) or of an affiliated company that has adopted the Plan with the consent of the Company, other than an intern, an employee of an agent, a general agent, a leased employee or a temporary employee, who is employed by the Company as an employee at the Company's home offices, field offices, regional offices or agency offices in various locations in the United States; and (2) any active career contract agent who is contracted with the Company as a statutory employee under Internal Revenue Code (IRC) Section 7701(a)(20).

Prior to May 6, 2022, the assets of the Plan were held in a group annuity contract issued by the Company, with the exception of participant loan notes which were held in trust by Reliance Trust. On May 6, 2022, the portion of the Plan's assets held in the group annuity contract's separate investment accounts were distributed to the Plan through the re-registration of the underlying mutual fund shares and are now held in the MassMutual Defined Contribution Master Trust (the Master Trust). Participant loan notes are also held in the Master Trust. The custodian of the Master Trust is Fidelity Management Trust Company. Plan assets invested in the guaranteed investment account remain under the group annuity contract issued by the Company. Fidelity Workplace Services LLC replaced Empower Retirement as the recordkeeper on May 6, 2022. The Company designated the MassMutual Plan Administrative Committee as the plan administrator and the MassMutual Investment Fiduciary Committee as the Plan's investment fiduciary.

The Plan is subject to the provisions of ERISA, as amended.

b. Participation

An employee or statutory employee under IRC Section 7701(a)(20) who meets the Plan's eligibility requirements may commence participation in the Plan on the date of their first hour of service.

Unless they elect otherwise, newly eligible employees and statutory employees are automatically enrolled in the Plan 30 days following date of hire or date of contract endorsement with a 5% before-tax contribution. Investment allocations for participants who do not make an election, including those who participate through automatic enrollment, will be made to the qualified default investment fund designated by the MassMutual Investment Fiduciary Committee.

c. Payment of Benefits

Benefits are paid to participants at retirement. Certain pre-retirement withdrawals are permissible under the Plan. Withdrawals made to individuals who have not attained the age of 59 ½ may be subject to a 10% early distribution penalty.

d. Contributions

The Company matches 100% of participant contributions up to 5% of eligible compensation, as defined in the Plan. The Plan permits participants to contribute up to 100% of eligible compensation, no more than 8% of which may be contributed as after tax dollars. Before tax and Roth contributions are generally limited by IRC regulations to $20,500 for 2022. Combined employee and employer contributions are limited by IRC regulations to $61,000. Participants who are age 50 or older by year end are eligible to contribute an additional $6,500 for 2022 to the Plan as before tax and/or Roth catch-up contributions. The Plan permits participants to roll over certain eligible distributions, subject to the provisions of the Plan..

Contributions are subject to certain limitations imposed by applicable provisions of the Plan and the IRC.

e. Vesting

Participants are immediately vested in their own contributions plus any earnings thereon. Each participant shall become vested in the value of the Company matching contributions, plus any earnings attributable thereto in accordance with the following vesting schedule:

Years of vesting service	Percentage vested
1	40%
2	80%
3	100%

Company contributions are 100% vested at attainment of age 65, retirement, disability, or death.

f. Participant Accounts

Each participant's account is credited with the participant's own contributions and allocations of (a) the Company's matching contribution, and (b) investment earnings or losses less expenses. The investment earnings or losses are reflected in investment income (loss) on the statements of changes in net assets available for benefits. A participant is entitled to the benefit that can be provided from the participant's vested account.

g. Forfeitures

If a participant terminates employment with the Company, the nonvested portion of the participant's Company matching contributions and any earnings thereon are forfeited. If the participant is re-employed within five years from the calendar year of termination, the forfeited amount of the Company match may be restored, subject to certain Plan provisions, requiring repayment of distributed amounts, and if no distribution was made, restoration will be made upon rehire.

As of December 31, 2022 and 2021, forfeited nonvested accounts totaled $4,394,860 and $1,459,291, respectively. Forfeitures may be used to reduce employer contributions. For the year ended December 31, 2022, no forfeited nonvested accounts were used to reduce employer contributions.

h. Amendments and Termination of the Plan

Effective January 1, 2022, the Plan was amended to revise the definition of compensation to exclude certain deferred compensation and student loan reimbursements. The Plan was amended on February 5, 2022 to add HITPS LLC as a participating employer and amended again effective March 28, 2022 to add a one-time makeup discretionary contribution for certain eligible HITPS employees.

Although the Company has not expressed any intent to do so, it has the right, under the Plan, to discontinue its contributions at any time and amend or terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants would become 100% vested.

i. Notes Receivable from Participants

Participant loans are available under the terms of the Plan document. Participants may borrow a minimum of $1,000, and a maximum equal to the lesser of $50,000 or 50% of their vested account balance, reduced by the highest outstanding loan balance in the last 12 months, from their accounts. The loan is deducted proportionally from the investment funds in which the participant's account is invested. The rate of interest charged on these loans is the prime rate (at the time of loan application), plus 2%. The range of interest rates on loans outstanding was 5.25% to 9.00% on December 31, 2022 and 5.25% to 11.50% on December 31, 2021.

j. Administrative Expenses

Expenses related to administering the Plan are shared between the Company and the Plan. Administrative expenses that are paid by the Company are excluded from these financial statements.

Individual transactional fees are paid by the Plan and are included as administrative expenses in the statement of changes in net assets.

k. Investment Options

The Company and the MassMutual Investment Fiduciary Committee on behalf of the Plan, act as investment managers for the investment options offered by the Plan. Participants may direct their current account balance and future contributions, unless otherwise noted, to various investment options offered by the Plan. The investment options offered by the Plan provide participants a range of risk and return opportunities to choose from.

Asset-based fees are deducted from an investment option asset, thereby reducing the investment return. Asset-based fees are included in investment income (loss) on the statement of changes in net assets.

2. Summary of Significant Accounting Policies

a. Basis of Accounting

The financial statements of the Plan are prepared on the modified cash basis of accounting, which is a comprehensive basis of accounting other than U.S. generally accepted accounting principles. The modified cash basis of accounting is a cash receipts and disbursement method of accounting. Contributions, interest and dividend income, benefit payments and expenses are recorded when received or paid. Although a modified cash basis of accounting represents a departure from U.S. generally accepted accounting principles, it is an allowable method of accounting for employee benefit plans filing under the reporting requirements of ERISA.

b. Use of Estimates

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Actual results could differ from those estimates.

c. Investment Valuation and Income Recognition

Investments in the Master Trust are stated at fair value. Mutual funds held by the Master Trust are open-ended mutual funds that are registered with the SEC. These funds are required to publish their daily net asset value (NAV) and to transact at that price. The mutual funds held by the Master Trust are deemed to be actively traded. Purchases and sales are recorded on a trade-date basis. Investment income (loss) includes interest, dividends, and the gains and losses on investments bought and sold as well as held during the year.

Investments in the separate investment accounts are stated at fair value. The value of the participation units is based on redemption values of units held by the Plan as determined using the fair value of the underlying assets on the last business day of the year. Purchases and sales of securities and units of participation are recorded on a trade date basis.

Investment contract (fully benefit-responsive contract) is stated at contract value. Contract value is the amount participants would receive if they were to initiate certain transactions under the terms of the Plan. A fully benefit-responsive contract provides for a stated return on principal invested over a specified period and permits withdrawals at contract value for benefit payments, loans, or transfers to other investment options offered to the participant by the Plan. (Note 4)

d. Payment of Benefits

Benefits are recorded when paid to the participant or when an annuity is purchased for the benefit of a participant.

3. Investment in Master Trust

The Plan has a divided interest in the Master Trust where each participating plan has a specific interest in the Master Trust. The MassMutual Ascend 401(k) Plan and the Massachusetts Mutual Life Insurance Company Agent Pension Plan also have divided interests in the Master Trust.

The Plan has a 96% interest in the Master Trust as of December 31, 2022. The table below presents the Plan’s interest in the Master Trust. The Plan did not participate in the Master Trust on December 31, 2021.

MassMutual Defined Contribution Plan Master Trust
As of December 31, 2022

	Master Trust Balance	Plan's Interest Master Trust Balance
	(In thousands)	
Assets:		
Mutual funds	$ 2,502,005	$ 2,390,400
Notes receivable from participants	24,370	23,668
Total investment in Master Trust	2,526,375	$ 2,414,068

The table below summarizes the change in net assets of the Master Trust. Net depreciation of investments includes gains and losses on investments bought and sold as well as held during the period.

MassMutual Defined Contribution Plan Master Trust
For the Period May 6, 2022 through December 31, 2022

	Master Trust Balance	Plan's Interest Master Trust Balance
	(In thousands)	
Change in Net Assets		
Dividend income	$ 152,190	$ 145,374
Net depreciation of investments	(273,332)	(261,277)
Interest income from notes receivable from participants	801	776
Transfer of assets into Master Trust	2,615,752	2,499,610
Transfer of notes receivable into Master Trust	24,257	23,646
Net transfers from participating plans	6,707	5,939
Increase in net assets	2,526,375	2,414,068
Net Assets:		
Beginning of period	-	-
End of year	$ 2,526,375	$ 2,414,068

4. Investment Contract

The assets of the MassMutual Fixed Interest Account investment option are held in a guaranteed investment account held under a group annuity contract, managed by the Company. The Company, the group annuity contract issuer, is contractually obligated to repay the Plan a specified guaranteed interest rate, which is reset twice a year. The Company was rated AA+ by Standard & Poor's as of December 31, 2022.

The investment in the guaranteed investment account held under the group annuity contract meets the fully benefit-responsive investment contract criteria and therefore is reported at contract value which represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Contract value is the relevant measure for fully benefit-responsive investment contracts because this is the amount received by participants if they were to initiate permitted transactions under the terms of the Plan. Participants may ordinarily direct withdrawal or transfer all or a portion of their investment at

contract value. No reserve has been recorded for credit risk. Certain events may limit the ability of the Plan's participants to transact at contract value. Such events include the following: (1) amendments to the Plan documents (including complete or partial plan termination or merger with another plan), (2) changes to the Plan's prohibition on competing investment options, (3) bankruptcy of the Company or other Company events (for example, divestitures or spin-offs of a subsidiary) that cause a significant withdrawal from the Plan, (4) the failure of the Master Trust to qualify for exemption from federal income taxes or any required prohibited transaction exemption under ERISA of 1974 or (5) premature termination of the contract. The Plan administrator believes the occurrence of any such event, which would limit the Plan's ability to transact at contract value with participants, would be less than remote. In addition, certain events allow the issuer to terminate the contract with the Plan and settle at an amount different than contract value. Such events include (1) an uncured violation of the Plan's investment guidelines, (2) a breach of material obligation under the contract, (3) a material amendment to the agreement without the consent of the issuer.

The interest rate used in the Plan's fully benefit-responsive contract is based on a formula that takes into account the investment earnings of the assets that support the contract using the investment year method, but not less than 3.00% as stipulated in the contract. Interest rates are reviewed on a semi-annual basis for resetting.

The table below represents both the crediting rates and the interest rates earned for the guaranteed investment account held under the fully benefit responsive group annuity contract.

	2022	2021
January - June	3.00%	3.00%
July - December	3.00%	3.00%
Average	3.00%	3.00%

5. Life Insurance Policies

Certain plans that were merged into this Plan provided for the purchase of life insurance as an investment alternative for participants as plan assets. After the plans were merged into this Plan, the existing life insurance policies continued as an investment option under the Plan. With respect to the life insurance investments, the cash surrender value of these policies is reported on the statements of net assets available for benefits. Cash surrender value approximates fair value. No additional policies can be purchased.

6. Fair Value Measurements

The Plan and the Master Trust use a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical investments (level 1 measurement) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy are described below:

Level 1 Observable inputs in the form of quoted market prices for identical investments in active markets.

Level 2 Observable inputs other than Level 1 prices, such as quoted market prices for similar investments, quoted prices in markets that are not active or other inputs that are observable or can be derived from observable market data for substantially the full term of the investments.

Level 3 One or more unobservable inputs that are supported by little or no market activity and are significant to the fair value of the investments. Level 3 investments include investments whose value is determined using internal models, as well as investments for which the determination of fair value requires significant management judgment or estimation.

An investment's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

The following is a description of the valuation methodologies used to measure fair value of investments:

Mutual Funds: Mutual funds are valued at the daily closing price as reported by the fund. Mutual funds held by the Plan are registered with the SEC and are required to publish their daily NAV. Mutual funds held by the Plan are deemed to be actively traded and are therefore classified as Level 1.

Life Insurance: Life Insurance Policies: Policy cash surrender values which are stated in policy contract approximates fair value. No observable price input and are therefore classified as Level 3.

Separate Investment Accounts: There are two methods of determining unit value for the separate investment accounts. The portfolio method is used when the separate investment account invests in a portfolio of securities or two or more underlying mutual funds, bank collective trust funds or other investment vehicles (each an "Underlying fund"). Under this method, the unit value of a separate investment account is determined by dividing the market value of such separate investment account on any valuation date by the total number of units in the separate investment account. The net investment factor method (NIF) is used when the separate investment account invests in shares or units of a single underlying fund. Under this method, the unit value of a separate investment account is determined by taking the unit value for the prior valuation day and multiplying it by the NIF for the current valuation day. Under both of these methods the separate investment accounts are classified as Level 2.

The following table sets forth by level, within the fair value hierarchy, the Master Trust's assets, and the Plan's assets at fair value as of December 31, 2022.

	Fair Value as of December 31, 2022			
	Level 1	Level 2	Level 3	Total
	(In thousands)			
Investments at fair value in the Master Trust:				
Mutual funds	$ 2,502,005	$ -	$ -	$ 2,502,005
Investments at fair value:				
Life inusurance policies	-	-	2,173	2,173

The following tables set forth by level, within the fair value hierarchy, the Plan's assets at fair value as of December 31, 2021.

	Fair Value as of December 31, 2021			
	Level 1	Level 2	Level 3	Total
		(In thousands)		
Investments at fair value:				
Pooled Separate Investment Accounts:				
MM Select Blue Chip Growth Fund (SIA-CKD)	$ -	$ 350,065	$ -	$ 350,065
MM Select Fundamental Value Fund (SIA-KY)	-	195,147	-	195,147
MM Select Small Cap Growth Equity Fund (SIA-IA)	-	145,883	-	145,883
Invesco Oppenheimer International Growth I Fund (SIA-CHX)	-	130,452	-	130,452
MM Select Equity Opportunities Fund (SIA-TA)	-	127,202	-	127,202
MM Select Mid Cap Growth Fund (SIA-UH)	-	119,684	-	119,684
Vanguard Instl Target Retire 2040 Fund (SIA-JCK)	-	116,767	-	116,767
Vanguard Total International Stock Index Fund (SIA-JG5)	-	116,288	-	116,288
Vanguard Instl Target Retire 2030 Fund (SIA-JCI)	-	111,424	-	111,424
Vanguard Instl Target Retire 2035 Fund (SIA-JCJ)	-	88,080	-	88,080
Vanguard Instl Target Retire 2050 Fund (SIA-JCM)	-	85,834	-	85,834
MM Premier Core Bond Fund (SIA-ED)	-	80,990	-	80,990
Vanguard Instl Target Retire 2025 Fund (SIA-JCH)	-	75,966	-	75,966
Vanguard Instl Target Retire 2045 Fund (SIA-JCL)	-	68,115	-	68,115
MM Select Small Company Value Fund (SIA-UY)	-	65,106	-	65,106
Invesco Oppenheimer Real Estate I Fund (SIA-CMG)	-	54,294	-	54,294
Vanguard Instl Target Retire 2020 Fund (SIA-JCG)	-	50,921	-	50,921
MM Premier Inflation-Protected and Income Fund (SIA-SM)	-	41,287	-	41,287
Vanguard Total Bond Market Index Fund (SIA-JG4)	-	40,115	-	40,115
MM Premier Strategic Emerging Markets Fund (SIA-QY)	-	39,202	-	39,202
Vanguard Instl Target Retire 2055 Fund (SIA-JCN)	-	36,396	-	36,396
MM Premier High Yield Fund (SIA-EV)	-	35,141	-	35,141
Vanguard Instl Target Retire 2060 Fund (SIA-JCO)	-	29,740	-	29,740
PIMCO Commodity Real Ret Strat Admin Fund (SIA-CJN)	-	14,911	-	14,911
Vanguard Instl Target Income Fund (SIA-JCD)	-	14,802	-	14,802
Vanguard Instl Target Retire 2015 Fund (SIA-JCF)	-	6,720	-	6,720
Vanguard Instl Target Retire 2065 Fund (SIA-JRY)	-	4,899	-	4,899
Total Pooled Separate Investment Accounts	-	2,245,431	-	2,245,431
Non-Pooled Separate Investment Accounts:				
Vanguard Institutional Index Fund (SIA-JG3)	-	509,860	-	509,860
Vanguard Extended Market Index Fund (SIA-JG2)	-	206,416	-	206,416
Total Non-Pooled Separate Investment Accounts	-	716,276	-	716,276
Life Insurance Policies	-	-	1,897	1,897
Total Investments	$ -	$ 2,961,707	$ 1,897	$ 2,963,604

There were no transfers of investments into or out of level 3 during the year ended December 31, 2022.

The table below sets forth a summary of changes in the fair value of the Plan's level 3 investments.

Balance at December 31, 2021	1,897
Cash flow activity:	
Appreciation and cash flow from life insurance policies	242
Other	34
Balance at December 31, 2022	2,173

7. Related Party Transactions (Parties-in-Interest)

Empower Retirement provided recordkeeping services through May 6, 2022. On May 6, 2022, Fidelity Workplace Solutions LLC replaced Empower Retirement as the Plan's recordkeeper.

Reliance Trust and the Company provided custodian services through May 6, 2022. Effective May 6, 2022, Fidelity Management Trust Company and the Company provided custodian services.

The MassMutual Investment Fiduciary Committee and the Company act as the Plan's investment fiduciary for the investment options offered by the Plan. The MassMutual Plan Administrative Committee and the Company are the plan administrator, and therefore, these transactions qualify as party-in-interest transactions. However, they are exempt from the prohibited transaction rules of ERISA.

The Plan invests in certain mutual funds that are managed by wholly-owned subsidiaries of the Company. Expenses associated with these investments, including the management fees paid to such subsidiaries, are paid out of the assets of the mutual funds. The Company is also the issuer of the group annuity contract. Because the Company is an employer with respect to the Plan, these transactions are party-in-interest transactions; however, they are exempt from the prohibited transaction rules under ERISA and the Internal Revenue Code.

8. Tax Status

The Internal Revenue Service has determined and informed the Plan by a letter dated May 12, 2017, that the Plan and related trust are established in accordance with applicable sections of the Code. Although the Plan has been amended since receiving this determination, legal counsel believes that the Plan is designed and is currently being operated in compliance with applicable requirements of the Internal Revenue Code. U.S. generally accepted accounting principles require the Plan's management to evaluate tax positions taken by the Plan and recognize a tax liability if the Plan has taken an uncertain position that more likely than not would not be sustained upon examination by the Internal Revenue Service. The Plan administrator has concluded that as of December 31, 2022, there are no uncertain positions taken or expected to be taken that would require recognition of a liability or disclosure in the financial statements.

The Plan is subject to routine audits by taxing jurisdictions, however, there are currently no audits for any tax periods in progress. The Plan administrator believes that the Plan is no longer subject to examinations for years prior to 2016.

9. Risks and Uncertainties

The Plan provides for various investment options in several investment securities and instruments. Investment securities are exposed to various risks, such as interest rate, market and credit risks. Due to the level of risks associated with certain investment securities and the level of uncertainty related to changes in the value of investment securities, it is at least reasonably possible that changes in risks and values in the near term could materially affect investment balances and the amounts reported in the statements of net assets available for benefits and the statement of changes in net assets available for benefits.

In November 2022, a putative class action complaint was filed in federal court (D. Mass) by a current participant in the MassMutual Thrift Plan (the "Plan") against MassMutual, Roger Crandall, the Plan Fiduciary and Plan Administrative Services Committees (and the unnamed members of those Committees).

The Complaint alleges, among other things, violations of ERISA related to alleged inappropriate investment in affiliated funds, the fixed interest account and unaffiliated Vanguard funds (claiming lower cost share-classes were available). It also complains of unreasonable record-keeping fees and suggests that MassMutual used the Plan as a so-called "anchor client" to support the record-keeping business for eventual sale. The Defendants believe that they have substantial defenses to these claims and intend to vigorously defend themselves.

In 2013, the Company received notice that the U.S. Department of Labor ("DOL") initiated an investigation of the Plan. In September 2023, the Company received verbal notice from the DOL that the investigation was closed on September 27, 2019.

10. Nonexempt Transactions

As reported on Schedule H, Part IV, Line 4a – Schedule of Delinquent Participant Contributions, certain participant contributions and loan repayments totaling $9,833,739 were not remitted to the trust within the time frame specified by the DOL's Regulation 29 CFR 2510.3-102 thus constituting nonexempt transactions between the Plan and the Company. The untimely remittances of participant contributions and loan repayments related to the 2022 plan year will be remitted to the Plan in 2023 with interest fully corrected.

11. Subsequent Events

The Plan has evaluated events and transactions subsequent from December 31, 2022 to October 10, 2023 and determined that there are no other events or transactions that would require adjustments or additional disclosure in the financial statements.

MASSMUTUAL THRIFT PLAN
EIN #04-1590850
Plan #004
Schedule H, Part IV, Line 4a – Schedule of Delinquent Participant Contributions (Modified Cash Basis)
For the Year Ended December 31, 2022

Participant contributions transferred late into the Plan		Total that constitute nonexempt prohibited transactions: $9,833,739			
Check here if late participant loan repayments are included:	x	Contributions not corrected	Contributions corrected outside VFCP	Contributions pending correction in VFCP	Total fully corrected under VFCP and PTE 2002-51
2022		$ 9,833,739	$ -	$ -	$ -

See accompanying independent auditors' report.

MASSMUTUAL THRIFT PLAN
EIN #04-1590850
Plan #004
Schedule H, Part IV, Line 4i – Schedule of Assets (Held at End of Year) (Modified Cash Basis)
December 31, 2022

	(b) Identity of issue, borrower, lessor, or similar party	(c) Description of investment including maturity date, rate of interest, collateral, par, or maturity value	(d) Cost	(e) Current value
(a)			*(in thousands)*	
*	Massachusetts Mutual Life Insurance Company	Cash Surrender Value of Life Insurance Contracts	**	2,173,309
*	Plan participants	Notes Receivable from participants (5.25%-9.00%)	**	23,668,387
*	Massachusetts Mutual Life Insurance Company	Fully Benefit Responsive Investment Contract	**	1,134,033,643
				$ 1,159,875,339

* Represents party in interest
** Cost not required for participant - directed investments
See accompanying independent auditors' report.

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EIN #04-1590850
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