

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 2018 This Form is Open to Public Inspection
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Part I	Annual Report Identification Information
For calendar plan year 2018 or fiscal plan year beginning <u>01/01/2018</u> and ending <u>12/31/2018</u>	
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.) ☒ 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:	☒ Form 5558 ☐ automatic extension ☐ the DFVC program ☐ special extension (enter description)

Part II	Basic Plan Information —enter all requested information		
1a Name of plan <u>W.R. GRACE & CO. - CT -RET. PLAN FOR HOURLY EES. --- TENNESSEE</u>	1b Three-digit plan number (PN) ▶	<u>134</u>	
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) <u>W. R. GRACE & CO. -CT</u> <u>7500 GRACE DRIVE, BUILDING 100</u> <u>COLUMBIA, MD 21044</u>		1c Effective date of plan <u>01/10/1977</u>	
		2b Employer Identification Number (EIN) <u>13-5114230</u>	
		2c Plan Sponsor's telephone number <u>410-531-4000</u>	
		2d Business code (see instructions) <u>325100</u>	

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.	10/11/2019	KERRIE WOLFE
	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

For Paperwork Reduction Act Notice, see the Instructions for Form 5500.

Form 5500 (2018)
v. 171027

3a Plan administrator's name and address ☐ Same as Plan Sponsor ADMINISTRATIVE COMMITTEE 7500 GRACE DRIVE, BUILDING 100 COLUMBIA, MD 21044	3b Administrator's EIN 13-2880089 3c Administrator's telephone number 410-531-4000
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	5 110
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 a(2) Total number of active participants at the end of the plan year b Retired or separated participants receiving benefits..... c Other retired or separated participants entitled to future benefits d Subtotal. Add lines 6a(2) , 6b , and 6c e Deceased participants whose beneficiaries are receiving or are entitled to receive benefits. f Total. Add lines 6d and 6e g Number of participants with account balances as of the end of the plan year (only defined contribution plans complete this item) h Number of participants who terminated employment during the plan year with accrued benefits that were less than 100% vested	6a(1) 55 6a(2) 59 6b 30 6c 15 6d 104 6e 10 6f 114 6g 6h 2
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: 1B 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) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor	9b Plan benefit arrangement (check all that apply) (1) ☐ Insurance (2) ☐ Code section 412(e)(3) insurance contracts (3) ☒ Trust (4) ☐ General assets of the sponsor
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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) ☒ **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) ☐ **H** (Financial Information)
- (2) ☒ **I** (Financial Information – Small Plan)
- (3) ☐ 0 **A** (Insurance Information)
- (4) ☐ **C** (Service Provider Information)
- (5) ☒ **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 2018 Form M-1 annual report. If the plan was not required to file the 2018 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 _____

<div>SCHEDULE SB (Form 5500) Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation</div>	<div>Single-Employer Defined Benefit Plan Actuarial Information</div> <div>This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code).</div> <div>▶ File as an attachment to Form 5500 or 5500-SF.</div>	<div>OMB No. 1210-0110</div> <div>2018</div> <div>This Form is Open to Public Inspection</div>
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018	
▶ Round off amounts to nearest dollar.	
▶ Caution: A penalty of \$1,000 will be assessed for late filing of this report unless reasonable cause is established.	
A Name of plan W.R. GRACE & CO. - CT -RET. PLAN FOR HOURLY EES. --- TENNESSEE	B Three-digit plan number (PN) ▶ 134
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF W. R. GRACE & CO. -CT	D Employer Identification Number (EIN) 13-5114230
E Type of plan: ☒ Single ☐ Multiple-A ☐ Multiple-B	F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500

Part I	Basic Information			
1	Enter the valuation date: Month 01 Day 01 Year 2018			
2	Assets:			
a	Market value.....	2a	10668225	
b	Actuarial value	2b	10183972	
3	Funding target/participant count breakdown	(1) Number of participants	(2) Vested Funding Target	(3) Total Funding Target
a	For retired participants and beneficiaries receiving payment	39	5274353	5274353
b	For terminated vested participants	16	450431	450431
c	For active participants	55	3658332	3905577
d	Total	110	9383116	9630361
4	If the plan is in at-risk status, check the box and complete lines (a) and (b)..... ☐			
a	Funding target disregarding prescribed at-risk assumptions	4a		
b	Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	4b		
5	Effective interest rate	5	5.67 %	
6	Target normal cost	6	212338	

Statement by Enrolled Actuary	
To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.	
SIGN HERE	
Signature of actuary	09/17/2019
TRICIA SCHWABENBAUER	Date
Type or print name of actuary	17-07200
AON CONSULTING, INC.	Most recent enrollment number
Firm name	410-547-2990
500 EAST PRATT STREET BALTIMORE, MD 21202	Telephone number (including area code)
Address of the firm	

Part II Beginning of Year Carryover and Prefunding Balances

	(a) Carryover balance	(b) Prefunding balance
7 Balance at beginning of prior year after applicable adjustments (line 13 from prior year)	0	838649
8 Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	211190
9 Amount remaining (line 7 minus line 8)	0	627459
10 Interest on line 9 using prior year's actual return of <u>11.22</u> %	0	70401
11 Prior year's excess contributions to be added to prefunding balance:		
a Present value of excess contributions (line 38a from prior year)		372210
b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of <u>5.88</u> %		9468
b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return		23696
c Total available at beginning of current plan year to add to prefunding balance		405374
d Portion of (c) to be added to prefunding balance		405374
12 Other reductions in balances due to elections or deemed elections	0	0
13 Balance at beginning of current year (line 9 + line 10 + line 11d – line 12)	0	1103234

Part III Funding Percentages

14 Funding target attainment percentage	14	94.29%
15 Adjusted funding target attainment percentage	15	105.74%
16 Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	97.93%
17 If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls**18** Contributions made to the plan for the plan year by employer(s) and employees:

(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
Totals ▶			18(b)	0	18(c) 0

19 Discounted employer contributions – see instructions for small plan with a valuation date after the beginning of the year:

a Contributions allocated toward unpaid minimum required contributions from prior years	19a	0
b Contributions made to avoid restrictions adjusted to valuation date	19b	0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date	19c	0

20 Quarterly contributions and liquidity shortfalls:

- a** Did the plan have a "funding shortfall" for the prior year? ☒ Yes ☐ No
- b** If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner? ☒ Yes ☐ No
- c** If line 20a is "Yes," see instructions and complete the following table as applicable:

Liquidity shortfall as of end of quarter of this plan year			
(1) 1st	(2) 2nd	(3) 3rd	(4) 4th
0	0	0	0

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:				
a Segment rates:	1st segment: 3.92%	2nd segment: 5.52%	3rd segment: 6.29%	☐ N/A, full yield curve used
b Applicable month (enter code)				21b 4
22 Weighted average retirement age				22 63
23 Mortality table(s) (see instructions)	Prior regulation:	☐ Prescribed - combined	☒ Prescribed - separate	☐ Substitute
	Current regulation:	☐ Prescribed - combined	☐ Prescribed - separate	☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment.	☐ Yes	☒ No
26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment.	☒ Yes	☐ No
27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment	27	

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	28	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	29	0
30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29)	30	0

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):			
a Target normal cost (line 6)	31a	212338	
b Excess assets, if applicable, but not greater than line 31a	31b	0	
32 Amortization installments:	Outstanding Balance	Installment	
a Net shortfall amortization installment	549623	93374	
b Waiver amortization installment	0	0	
33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount	33		
34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33)	34	305712	
	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement	0	305712	305712
36 Additional cash requirement (line 34 minus line 35)	36	0	
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	37	0	
38 Present value of excess contributions for current year (see instructions)			
a Total (excess, if any, of line 37 over line 36)	38a	0	
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	38b	0	
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	39	0	
40 Unpaid minimum required contributions for all years	40	0	

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:	
a Schedule elected	☐ 2 plus 7 years ☐ 15 years
b Eligible plan year(s) for which the election in line 41a was made	☐ 2008 ☐ 2009 ☐ 2010 ☐ 2011

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
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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
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plan sponsor**c** EIN-PN

SCHEDULE I (Form 5500) <small>Department of the Treasury Internal Revenue Service</small> <small>Department of Labor Employee Benefits Security Administration</small> <small>Pension Benefit Guaranty Corporation</small>	Financial Information—Small Plan 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 <div style="border: 1px solid black; padding: 5px; display: inline-block;"> 2018 </div> This Form is Open to Public Inspection
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018					
A Name of plan W.R. GRACE & CO. - CT -RET. PLAN FOR HOURLY EES. --- TENNESSEE	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">B Three-digit plan number (PN) ►</td> <td style="width:40%; text-align: center; color: blue;">134</td> </tr> <tr> <td colspan="2" style="height: 20px;"></td> </tr> </table>	B Three-digit plan number (PN) ►	134		
B Three-digit plan number (PN) ►	134				
C Plan sponsor's name as shown on line 2a of Form 5500 W. R. GRACE & CO. -CT	D Employer Identification Number (EIN) 13-5114230				

Complete Schedule I if the plan covered fewer than 100 participants as of the beginning of the plan year. You may also complete Schedule I if you are filing as a small plan under the 80-120 participant rule (see instructions). Complete Schedule H if reporting as a large plan or DFE.

Part I	Small Plan Financial Information
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Report below the current value of assets and liabilities, income, expenses, transfers and changes in net assets during the plan year. Combine the value of plan assets held in more than one trust. Do not enter the value of the portion of an insurance contract that guarantees during this plan year to pay a specific dollar benefit at a future date. 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.**

		(a) Beginning of Year	(b) End of Year
1 Plan Assets and Liabilities:			
a Total plan assets	1a	10669334	9780693
b Total plan liabilities	1b		
c Net plan assets (subtract line 1b from line 1a)	1c	10669334	9780693
2 Income, Expenses, and Transfers for this Plan Year:		(a) Amount	(b) Total
a Contributions received or receivable:			
(1) Employers.....	2a(1)		
(2) Participants.....	2a(2)		
(3) Others (including rollovers)	2a(3)		
b Noncash contributions	2b		-345476
c Other income.....	2c	-345476	
d Total income (add lines 2a(1), 2a(2), 2a(3), 2b, and 2c)	2d		
e Benefits paid (including direct rollovers)	2e	457749	
f Corrective distributions (see instructions)	2f		543165
g Certain deemed distributions of participant loans (see instructions).....	2g		
h Administrative service providers (salaries, fees, and commissions)	2h		
i Other expenses	2i	85416	
j Total expenses (add lines 2e, 2f, 2g, 2h, and 2i).....	2j		-888641
k Net income (loss) (subtract line 2j from line 2d)	2k		
l Transfers to (from) the plan (see instructions)	2l		

3 Specific Assets: If the plan held assets at any time during the plan year in any of the following categories, check "Yes" and enter the current value of any assets remaining in the plan as of the end of the plan year. Allocate the value of the plan's interest in a commingled trust containing the assets of more than one plan on a line-by-line basis unless the trust meets one of the specific exceptions described in the instructions.				
		Yes	No	Amount
a Partnership/joint venture interests	3a		X	
b Employer real property	3b		X	
c Real estate (other than employer real property)	3c		X	
d Employer securities	3d		X	
e Participant loans	3e		X	
f Loans (other than to participants)	3f		X	
g Tangible personal property	3g		X	

Part II Compliance Questions

4 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	
b Were any loans by the plan or fixed income obligations due the plan in default as of the close of plan year or classified during the year as uncollectible? Disregard participant loans secured by the participant's account balance.			
4b		X	
c Were any leases to which the plan was a party in default or classified during the year as uncollectible?			
4c		X	
d Were there any nonexempt transactions with any party-in-interest? (Do not include transactions reported on line 4a.)			
4d		X	
e Was the plan covered by a fidelity bond?	X		15000000
4e			
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 at any time hold 20% or more of its assets in any single security, debt, mortgage, parcel of real estate, or partnership/joint venture interest?			
4i		X	
j Were all the plan assets either distributed to participants or beneficiaries, transferred to another plan, or brought under the control of the PBGC?			
4j		X	
k Are you claiming a waiver of the annual examination and report of an independent qualified public accountant (IQPA) under 29 CFR 2520.104-46? If "No," attach an IQPA's report or 2520.104-50 statement. (See instructions on waiver eligibility and conditions.)			
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			
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 If the plan is a defined benefit plan, is it covered under the PBGC insurance program (See ERISA section 4021.)? ☒ Yes ☐ No ☐ Not determined.
 If "Yes" is checked, enter the My PAA confirmation number from the PBGC premium filing for this plan year 4159314. (See instructions.)

<div>SCHEDULE R (Form 5500) Department of the Treasury Internal Revenue Service Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation</div>	<div>Retirement Plan Information</div> <div>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).</div> <div>▶ File as an attachment to Form 5500.</div>	<div>OMB No. 1210-0110</div> <div>2018</div> <div>This Form is Open to Public Inspection.</div>
For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018		
A Name of plan W.R. GRACE & CO. - CT -RET. PLAN FOR HOURLY EES. --- TENNESSEE		B Three-digit plan number (PN) ▶ 134
C Plan sponsor's name as shown on line 2a of Form 5500 W. R. GRACE & CO. -CT		D Employer Identification Number (EIN) 13-5114230
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): 36-1561860		
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 0
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		
For Paperwork Reduction Act Notice, see the Instructions for Form 5500.		
Schedule R (Form 5500) 2018 v. 171027		

Part V Additional Information for Multiemployer Defined Benefit Pension Plans

13 Enter the following information for each employer that contributed more than 5% of total contributions to the plan during the plan year (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 participants on whose behalf no contributions were made by an employer as an employer of the participant for:

a The current year

b The plan year immediately preceding the current plan year

c The second preceding plan year

14a**14b****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

b The corresponding number for the second preceding plan year

15a**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

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

16a**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):

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Schedule SB, line 26—Schedule of Active Participant Data as of January 1, 2018

Attained Age	Number of Participants Years of Credited Service									
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+
<25		2								
25-29		1								
30-34		2								
35-39		1	1							
40-44	1	2	2							
45-49	1	2	3	3				1		
50-54	2	4	3		1	2	1	1		
55-59			2			2		1		
60-64		2	2					4	1	2
65-69		1								2
70+										

N-55

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Schedule SB, Part V—Statement of Actuarial Assumptions/Methods

Interest Rates for Minimum Funding Purposes	Based on segment rates with a four-month lookback (as of September 2017), each adjusted as needed to fall within the 25-year average interest rate stabilization corridor
1st Segment Rate	3.92%
2nd Segment Rate	5.52%
3rd Segment Rate	6.29%
Interest Rates for Maximum Tax Purposes	Based on segment rates with a four-month lookback (as of September 2017), without regard to interest rate stabilization
1st Segment Rate	1.75%
2nd Segment Rate	3.76%
3rd Segment Rate	4.66%
Retirement Age	
Active Participants	See Table 1.
Terminated Vested Participants	See Table 2.
Mortality Rates	
Healthy and Disabled	2018 static mortality table (with new basis adoption deferred to 2019) for annuitants and non-annuitants per §1.430(h)(3)-1(e).
Withdrawal Rates	See Table 3.
Disability Rates	See Table 4.
Form of Benefit Payment	See Table 5.
Decrement Timing	Beginning of year decrements
Surviving Spouse Benefit	It is assumed that 80% of males and 80% of females have an eligible spouse, and that males are three years older than their spouses.
Benefit Limits	Projected benefits are limited by the current IRC section 415 maximum benefit of \$220,000.

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Valuation of Plan Assets

Smoothed fair market value of assets over the current and prior two years, adjusted for contributions, benefit payments, administrative expenses, and expected earnings. The average value of assets calculated in this manner is further limited to not less than 90% nor more than 110% of fair market value.

A characteristic of this method is that the expected distribution of the value of plan assets is skewed toward understatement relative to the corresponding market values for expected long-term rates of return in excess of the third segment rate under IRC section 430(h)(2)(C)(iii).

Expected Return on Assets
2016 Plan Year

5.50%

The applicable third segment rate limitation is 6.65%.

2017 Plan Year

5.50%

The applicable third segment rate limitation is 6.48%.

2018 Plan Year

5.25%

The applicable third segment rate limitation is 6.29%.

Trust Expenses Included in Target Normal Cost

\$74,201, actual expenses from prior year with a 5.00% load

Actuarial Method

Standard unit credit cost method

Valuation Date

January 1, 2018

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Table 1

Retirement Rates—Active Participants

<u>Age</u>	<u>Rate</u>
55	5.00%
56	5.00%
57	5.00%
58	5.00%
59	5.00%
60	7.00%
61	9.00%
62	12.00%
63	16.00%
64	23.00%
65	28.00%
66	28.00%
67	26.00%
68	25.00%
69	25.00%
70+	100.00%

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Table 2

Retirement Rates—Terminated Vested Participants

<u>Age</u>	<u>Rate</u>
55	13.00%
56	5.00%
57	5.00%
58	5.00%
59	6.00%
60	7.00%
61	10.00%
62	13.00%
63	10.00%
64	18.00%
65+	100.00%

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
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Table 3—Page 1 of 2

Withdrawal Rates

Age	Years of Service			
	0-1	2-4	5-9	10+
20	18.00%	14.00%	15.00%	11.00%
21	22.00%	18.00%	15.00%	11.00%
22	24.00%	16.00%	15.00%	11.00%
23	25.00%	14.00%	15.00%	11.00%
24	25.00%	14.00%	14.00%	11.00%
25	21.00%	13.00%	13.00%	11.00%
26	19.00%	17.00%	8.00%	11.00%
27	13.00%	15.00%	7.00%	11.00%
28	10.00%	17.00%	8.00%	11.00%
29	7.00%	15.00%	8.00%	14.00%
30	13.00%	14.00%	9.00%	14.00%
31	13.00%	13.00%	12.00%	16.00%
32	15.00%	15.00%	12.00%	14.00%
33	15.00%	13.00%	13.00%	11.00%
34	16.00%	14.00%	14.00%	6.00%
35	13.00%	13.00%	13.00%	6.00%
36	13.00%	13.00%	12.00%	6.00%
37	12.00%	11.00%	11.00%	5.00%
38	10.00%	12.00%	9.00%	5.00%
39	8.00%	12.00%	9.00%	5.00%
40	8.00%	12.00%	9.00%	5.00%
41	8.00%	10.00%	9.00%	5.00%
42	10.00%	11.00%	9.00%	5.00%
43	13.00%	11.00%	10.00%	5.00%
44	14.00%	10.00%	9.00%	5.00%

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Table 3—Page 2 of 2

Withdrawal Rates

Age	Years of Service			
	0-1	2-4	5-9	10+
45	14.00%	9.00%	9.00%	4.00%
46	13.00%	9.00%	7.00%	4.00%
47	11.00%	10.00%	7.00%	3.00%
48	7.00%	11.00%	7.00%	3.00%
49	10.00%	12.00%	7.00%	4.00%
50	7.00%	13.00%	6.00%	3.00%
51	11.00%	13.00%	7.00%	3.00%
52	13.00%	12.00%	7.00%	4.00%
53	14.00%	11.00%	8.00%	3.00%
54	13.00%	10.00%	8.00%	4.00%
55+	0.00%	0.00%	0.00%	0.00%

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Table 4

Disability Rates

Age	Rate	Age	Rate
18	0.04%	45	0.16%
19	0.04%	46	0.19%
		47	0.22%
20	0.04%	48	0.26%
21	0.04%	49	0.29%
22	0.04%		
23	0.04%	50	0.33%
24	0.04%	51	0.37%
		52	0.41%
25	0.04%	53	0.45%
26	0.05%	54	0.50%
27	0.05%		
28	0.05%	55	0.55%
29	0.05%	56	0.61%
		57	0.72%
30	0.05%	58	0.83%
31	0.05%	59	0.91%
32	0.05%		
33	0.06%	60	1.04%
34	0.06%	61	1.19%
		62	1.37%
35	0.06%	63	1.57%
36	0.07%	64	2.04%
37	0.07%		
38	0.07%	65+	0.00%
39	0.08%		
40	0.08%		
41	0.09%		
42	0.09%		
43	0.10%		
44	0.13%		

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Table 5

Form of Benefit Payment

<u>Payment Form</u>	<u>Probability</u>
Single Life Annuity	50.00%
10 Year Certain and Life	5.00%
100% Joint and Survivor Annuity	20.00%
75% Joint and Survivor Annuity	5.00%
66% Joint and Survivor Annuity	5.00%
50% Joint and Survivor Annuity	15.00%

SCHEDULE SB (Form 5500) <small>Department of the Treasury Internal Revenue Service</small> <small>Department of Labor Employee Benefits Security Administration Pension Benefit Guaranty Corporation</small>	Single-Employer Defined Benefit Plan Actuarial Information This schedule is required to be filed under section 104 of the Employee Retirement Income Security Act of 1974 (ERISA) and section 6059 of the Internal Revenue Code (the Code). ► File as an attachment to Form 5500 or 5500-SF.	OMB No. 1210-0110 2018 This Form is Open to Public Inspection
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For calendar plan year 2018 or fiscal plan year beginning 01/01/2018 and ending 12/31/2018

► **Round off amounts to nearest dollar.**

► **Caution:** A penalty of \$1,000 will be assessed for late filing of this report unless reasonable cause is established.

A Name of plan W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee	B Three-digit plan number (PN) ►	134
C Plan sponsor's name as shown on line 2a of Form 5500 or 5500-SF W.R. Grace & Co.-CT	D Employer Identification Number (EIN) 13-5114230	
E Type of plan: ☒ Single ☐ Multiple-A ☐ Multiple-B		
F Prior year plan size: ☐ 100 or fewer ☐ 101-500 ☒ More than 500		

Part I Basic Information				
1 Enter the valuation date: Month <u>01</u> Day <u>01</u> Year <u>2018</u>				
2 Assets:				
a Market value.....	2a	10,668,225		
b Actuarial value	2b	10,183,972		
3 Funding target/participant count breakdown	(1) Number of participants	(2) Vested Funding Target	(3) Total Funding Target	
a For retired participants and beneficiaries receiving payment	39	5,274,353	5,274,353	
b For terminated vested participants	16	450,431	450,431	
c For active participants	55	3,658,332	3,905,577	
d Total	110	9,383,116	9,630,361	
4 If the plan is in at-risk status, check the box and complete lines (a) and (b)..... ☐				
a Funding target disregarding prescribed at-risk assumptions.....	4a			
b Funding target reflecting at-risk assumptions, but disregarding transition rule for plans that have been in at-risk status for fewer than five consecutive years and disregarding loading factor	4b			
5 Effective interest rate.....	5	5.67%		
6 Target normal cost	6	212,338		

Statement by Enrolled Actuary

To the best of my knowledge, the information supplied in this schedule and accompanying schedules, statements and attachments, if any, is complete and accurate. Each prescribed assumption was applied in accordance with applicable law and regulations. In my opinion, each other assumption is reasonable (taking into account the experience of the plan and reasonable expectations) and such other assumptions, in combination, offer my best estimate of anticipated experience under the plan.

SIGN HERE	Tricia Schwabenbauer <div style="text-align: right;">Signature of actuary</div>	09/17/2019 Date 1707200 Most recent enrollment number 410-547-2990 Telephone number (including area code)
	Tricia Schwabenbauer Type or print name of actuary Aon Consulting, Inc. Firm name 500 East Pratt Street Baltimore MD 21202 Address of the firm	

If the actuary has not fully reflected any regulation or ruling promulgated under the statute in completing this schedule, check the box and see instructions ☐

For Paperwork Reduction Act Notice, see the Instructions for Form 5500 or 5500-SF.

Schedule SB (Form 5500) 2018
v. 171027

Part II Beginning of Year Carryover and Prefunding Balances

	(a) Carryover balance	(b) Prefunding balance
7 Balance at beginning of prior year after applicable adjustments (line 13 from prior year).....	0	838,649
8 Portion elected for use to offset prior year's funding requirement (line 35 from prior year)	0	211,190
9 Amount remaining (line 7 minus line 8).....	0	627,459
10 Interest on line 9 using prior year's actual return of <u>11.22%</u>	0	70,401
11 Prior year's excess contributions to be added to prefunding balance:		
a Present value of excess contributions (line 38a from prior year).....		372,210
b(1) Interest on the excess, if any, of line 38a over line 38b from prior year Schedule SB, using prior year's effective interest rate of <u>5.88%</u>		9,468
b(2) Interest on line 38b from prior year Schedule SB, using prior year's actual return.....		23,696
c Total available at beginning of current plan year to add to prefunding balance.....		405,374
d Portion of (c) to be added to prefunding balance.....		405,374
12 Other reductions in balances due to elections or deemed elections.....	0	0
13 Balance at beginning of current year (line 9 + line 10 + line 11d – line 12).....	0	1,103,234

Part III Funding Percentages

14 Funding target attainment percentage	14	94.29%
15 Adjusted funding target attainment percentage.....	15	105.74%
16 Prior year's funding percentage for purposes of determining whether carryover/prefunding balances may be used to reduce current year's funding requirement	16	97.93%
17 If the current value of the assets of the plan is less than 70 percent of the funding target, enter such percentage.	17	%

Part IV Contributions and Liquidity Shortfalls

18 Contributions made to the plan for the plan year by employer(s) and employees:					
(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees	(a) Date (MM-DD-YYYY)	(b) Amount paid by employer(s)	(c) Amount paid by employees
Totals ▶			18(b)	0	18(c) 0

19 Discounted employer contributions – see instructions for small plan with a valuation date after the beginning of the year:	
a Contributions allocated toward unpaid minimum required contributions from prior years.....	19a 0
b Contributions made to avoid restrictions adjusted to valuation date	19b 0
c Contributions allocated toward minimum required contribution for current year adjusted to valuation date.....	19c 0
20 Quarterly contributions and liquidity shortfalls:	
a Did the plan have a "funding shortfall" for the prior year?.....	☒ Yes ☐ No
b If line 20a is "Yes," were required quarterly installments for the current year made in a timely manner?	☒ Yes ☐ No
c If line 20a is "Yes," see instructions and complete the following table as applicable:	

Liquidity shortfall as of end of quarter of this plan year

(1) 1st	(2) 2nd	(3) 3rd	(4) 4th
0	0	0	0

Part V Assumptions Used to Determine Funding Target and Target Normal Cost

21 Discount rate:				
a Segment rates:	1st segment: 3.92 %	2nd segment: 5.52 %	3rd segment: 6.29 %	☐ N/A, full yield curve used
b Applicable month (enter code)				21b 4
22 Weighted average retirement age				22 63
23 Mortality table(s) (see instructions)	Prior regulation:	☐ Prescribed - combined	☒ Prescribed - separate	☐ Substitute
	Current regulation:	☐ Prescribed - combined	☐ Prescribed - separate	☐ Substitute

Part VI Miscellaneous Items

24 Has a change been made in the non-prescribed actuarial assumptions for the current plan year? If "Yes," see instructions regarding required attachment.	☒ Yes ☐ No
25 Has a method change been made for the current plan year? If "Yes," see instructions regarding required attachment.	☐ Yes ☒ No
26 Is the plan required to provide a Schedule of Active Participants? If "Yes," see instructions regarding required attachment.	☒ Yes ☐ No
27 If the plan is subject to alternative funding rules, enter applicable code and see instructions regarding attachment	27

Part VII Reconciliation of Unpaid Minimum Required Contributions For Prior Years

28 Unpaid minimum required contributions for all prior years	28	0
29 Discounted employer contributions allocated toward unpaid minimum required contributions from prior years (line 19a)	29	0
30 Remaining amount of unpaid minimum required contributions (line 28 minus line 29)	30	0

Part VIII Minimum Required Contribution For Current Year

31 Target normal cost and excess assets (see instructions):			
a Target normal cost (line 6)	31a	212,338	
b Excess assets, if applicable, but not greater than line 31a	31b	0	
32 Amortization installments:	Outstanding Balance	Installment	
a Net shortfall amortization installment	549,623	93,374	
b Waiver amortization installment	0	0	
33 If a waiver has been approved for this plan year, enter the date of the ruling letter granting the approval (Month _____ Day _____ Year _____) and the waived amount	33		
34 Total funding requirement before reflecting carryover/prefunding balances (lines 31a - 31b + 32a + 32b - 33)	34	305,712	
	Carryover balance	Prefunding balance	Total balance
35 Balances elected for use to offset funding requirement	0	305,712	305,712
36 Additional cash requirement (line 34 minus line 35)	36	0	
37 Contributions allocated toward minimum required contribution for current year adjusted to valuation date (line 19c)	37	0	
38 Present value of excess contributions for current year (see instructions)			
a Total (excess, if any, of line 37 over line 36)	38a	0	
b Portion included in line 38a attributable to use of prefunding and funding standard carryover balances	38b	0	
39 Unpaid minimum required contribution for current year (excess, if any, of line 36 over line 37)	39	0	
40 Unpaid minimum required contributions for all years	40	0	

Part IX Pension Funding Relief Under Pension Relief Act of 2010 (See Instructions)

41 If an election was made to use PRA 2010 funding relief for this plan:	
a Schedule elected	☐ 2 plus 7 years ☐ 15 years
b Eligible plan year(s) for which the election in line 41a was made	☐ 2008 ☐ 2009 ☐ 2010 ☐ 2011

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Schedule SB, line 22—Description of Weighted Average Retirement Age

The average retirement age shown in line 22 has been calculated by assuming the following retirement rates and no decrements other than retirement for this calculation. All retirements are assumed to occur at beginning of year.

(a) Age	(b) Rate	(c) Weight	(d) Product (a) × (b) × (c)
55	5.00%	1.0000	2.75
56	5.00%	0.9500	2.66
57	5.00%	0.9025	2.57
58	5.00%	0.8574	2.49
59	5.00%	0.8145	2.40
60	7.00%	0.7738	3.25
61	9.00%	0.7196	3.95
62	12.00%	0.6549	4.87
63	16.00%	0.5763	5.81
64	23.00%	0.4841	7.13
65	28.00%	0.3727	6.78
66	28.00%	0.2684	4.96
67	26.00%	0.1932	3.37
68	25.00%	0.1430	2.43
69	25.00%	0.1072	1.85
70	100.00%	0.0804	5.63
Weighted Average			62.90

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Schedule SB, line 24—Change in Actuarial Assumptions

The funding valuation reflects the following assumption change:

- A change in the unlimited expected rate of return on assets from 5.50% to 5.25%.

This change was made to better reflect the anticipated plan experience. This assumption change did not reduce the funding shortfall; as such, approval of the Commissioner is not required.

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
EIN: 13-5114230 PN: 134

Schedule SB, line 26—Schedule of Active Participant Data as of January 1, 2018

Attained Age	Number of Participants Years of Credited Service									
	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+
<25		2								
25-29		1								
30-34		2								
35-39		1	1							
40-44	1	2	2							
45-49	1	2	3	3				1		
50-54	2	4	3		1	2	1	1		
55-59			2			2		1		
60-64		2	2					4	1	2
65-69		1								2
70+										

N-55

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Schedule SB, line 32—Schedule of Amortization Bases

Type of Base	Present Value of Installment	Date Established	Years Remaining	Amortization Installment
Shortfall	\$ 166,593	January 1, 2017	6	\$ 30,844
Shortfall	\$ 383,030	January 1, 2018	7	\$ 62,530

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Schedule SB, Part V—Statement of Actuarial Assumptions/Methods

Interest Rates for Minimum Funding Purposes	Based on segment rates with a four-month lookback (as of September 2017), each adjusted as needed to fall within the 25-year average interest rate stabilization corridor
1st Segment Rate	3.92%
2nd Segment Rate	5.52%
3rd Segment Rate	6.29%
Interest Rates for Maximum Tax Purposes	Based on segment rates with a four-month lookback (as of September 2017), without regard to interest rate stabilization
1st Segment Rate	1.75%
2nd Segment Rate	3.76%
3rd Segment Rate	4.66%
Retirement Age	
Active Participants	See Table 1.
Terminated Vested Participants	See Table 2.
Mortality Rates	
Healthy and Disabled	2018 static mortality table (with new basis adoption deferred to 2019) for annuitants and non-annuitants per §1.430(h)(3)-1(e).
Withdrawal Rates	See Table 3.
Disability Rates	See Table 4.
Form of Benefit Payment	See Table 5.
Decrement Timing	Beginning of year decrements
Surviving Spouse Benefit	It is assumed that 80% of males and 80% of females have an eligible spouse, and that males are three years older than their spouses.
Benefit Limits	Projected benefits are limited by the current IRC section 415 maximum benefit of \$220,000.

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Valuation of Plan Assets

Smoothed fair market value of assets over the current and prior two years, adjusted for contributions, benefit payments, administrative expenses, and expected earnings. The average value of assets calculated in this manner is further limited to not less than 90% nor more than 110% of fair market value.

A characteristic of this method is that the expected distribution of the value of plan assets is skewed toward understatement relative to the corresponding market values for expected long-term rates of return in excess of the third segment rate under IRC section 430(h)(2)(C)(iii).

Expected Return on Assets
2016 Plan Year

5.50%

The applicable third segment rate limitation is 6.65%.

2017 Plan Year

5.50%

The applicable third segment rate limitation is 6.48%.

2018 Plan Year

5.25%

The applicable third segment rate limitation is 6.29%.

Trust Expenses Included in Target Normal Cost

\$74,201, actual expenses from prior year with a 5.00% load

Actuarial Method

Standard unit credit cost method

Valuation Date

January 1, 2018

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Table 1

Retirement Rates—Active Participants

<u>Age</u>	<u>Rate</u>
55	5.00%
56	5.00%
57	5.00%
58	5.00%
59	5.00%
60	7.00%
61	9.00%
62	12.00%
63	16.00%
64	23.00%
65	28.00%
66	28.00%
67	26.00%
68	25.00%
69	25.00%
70+	100.00%

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Table 2

Retirement Rates—Terminated Vested Participants

<u>Age</u>	<u>Rate</u>
55	13.00%
56	5.00%
57	5.00%
58	5.00%
59	6.00%
60	7.00%
61	10.00%
62	13.00%
63	10.00%
64	18.00%
65+	100.00%

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Table 3—Page 1 of 2

Withdrawal Rates

Age	Years of Service			
	0-1	2-4	5-9	10+
20	18.00%	14.00%	15.00%	11.00%
21	22.00%	18.00%	15.00%	11.00%
22	24.00%	16.00%	15.00%	11.00%
23	25.00%	14.00%	15.00%	11.00%
24	25.00%	14.00%	14.00%	11.00%
25	21.00%	13.00%	13.00%	11.00%
26	19.00%	17.00%	8.00%	11.00%
27	13.00%	15.00%	7.00%	11.00%
28	10.00%	17.00%	8.00%	11.00%
29	7.00%	15.00%	8.00%	14.00%
30	13.00%	14.00%	9.00%	14.00%
31	13.00%	13.00%	12.00%	16.00%
32	15.00%	15.00%	12.00%	14.00%
33	15.00%	13.00%	13.00%	11.00%
34	16.00%	14.00%	14.00%	6.00%
35	13.00%	13.00%	13.00%	6.00%
36	13.00%	13.00%	12.00%	6.00%
37	12.00%	11.00%	11.00%	5.00%
38	10.00%	12.00%	9.00%	5.00%
39	8.00%	12.00%	9.00%	5.00%
40	8.00%	12.00%	9.00%	5.00%
41	8.00%	10.00%	9.00%	5.00%
42	10.00%	11.00%	9.00%	5.00%
43	13.00%	11.00%	10.00%	5.00%
44	14.00%	10.00%	9.00%	5.00%

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Withdrawal Rates

Age	Years of Service			
	0-1	2-4	5-9	10+
45	14.00%	9.00%	9.00%	4.00%
46	13.00%	9.00%	7.00%	4.00%
47	11.00%	10.00%	7.00%	3.00%
48	7.00%	11.00%	7.00%	3.00%
49	10.00%	12.00%	7.00%	4.00%
50	7.00%	13.00%	6.00%	3.00%
51	11.00%	13.00%	7.00%	3.00%
52	13.00%	12.00%	7.00%	4.00%
53	14.00%	11.00%	8.00%	3.00%
54	13.00%	10.00%	8.00%	4.00%
55+	0.00%	0.00%	0.00%	0.00%

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Table 4

Disability Rates

Age	Rate	Age	Rate
18	0.04%	45	0.16%
19	0.04%	46	0.19%
		47	0.22%
20	0.04%	48	0.26%
21	0.04%	49	0.29%
22	0.04%		
23	0.04%	50	0.33%
24	0.04%	51	0.37%
		52	0.41%
25	0.04%	53	0.45%
26	0.05%	54	0.50%
27	0.05%		
28	0.05%	55	0.55%
29	0.05%	56	0.61%
		57	0.72%
30	0.05%	58	0.83%
31	0.05%	59	0.91%
32	0.05%		
33	0.06%	60	1.04%
34	0.06%	61	1.19%
		62	1.37%
35	0.06%	63	1.57%
36	0.07%	64	2.04%
37	0.07%		
38	0.07%	65+	0.00%
39	0.08%		
40	0.08%		
41	0.09%		
42	0.09%		
43	0.10%		
44	0.13%		

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Table 5

Form of Benefit Payment

<u>Payment Form</u>	<u>Probability</u>
Single Life Annuity	50.00%
10 Year Certain and Life	5.00%
100% Joint and Survivor Annuity	20.00%
75% Joint and Survivor Annuity	5.00%
66% Joint and Survivor Annuity	5.00%
50% Joint and Survivor Annuity	15.00%

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W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
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Schedule SB, Part V—Summary of Plan Provisions

General Information

Original Effective Date	January 10, 1977
Effective Date of Last Amendment	January 1, 2006
Plan Year	January 1 to December 31
Employer Fiscal Year	January 1 to December 31
Employer ID Number	13-5114230
Plan Administrator's ID Number	13-5114230
Plan Number	134
Plan Administrator	Administrative Committee

Eligibility Date of hire.

Service

Credited Service	From date of hire (maximum of 45 years).
Vesting Service	1,000 hours of service.

Normal Retirement

Eligibility Age 65.

Benefit Benefit level per month multiplied by credited service:

Effective Date	Benefit Level
September 1, 2005	\$50.00 Plus 1/36 of contribution

Average Compensation N/A

Early Retirement

Eligibility Age 55.

Benefit Accrued benefit reduced 1/6% per month preceding age 62. No reduction at Rule of 90 (age plus service equals 90 or more).

Disability Retirement

Eligibility Age 45 and 10 years of service or 15 years of service.

Benefit Accrued benefit.

Schedule SB Attachment (Form 5500)—2018 Plan Year
W.R. Grace & Co.-CT -Ret. Plan for Hourly Ees. -Tennessee
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Postponed Retirement

Eligibility

Actual retirement after age 65.

Benefit

A monthly benefit equal to the accrued benefit calculated as of the actual retirement date.

Preretirement Death

Eligibility

Five years of service or age 55.

Benefit

Accrued benefit at age 55.

Severance Benefit

Eligibility

Fewer Than Five Years of Service

0%

Five or More Years of Service

100%

Benefit

Accrued benefit at age 65.

Normal Form of Payment

Married

Reduced 50% joint and survivor.

Single

Life annuity.

Optional Methods of Settlement

Reduced benefit to be paid during participant's lifetime with the provision that after his death, a benefit equal to either 100%, 75%, 66%, or 50% is paid to his beneficiary.

Increased retirement benefit paid prior to Social Security benefit eligibility and reduced benefit paid thereafter in order to provide a uniform income.

A reduced benefit to be paid for 120 months certain and thereafter for life.

Schedule SB Attachment (Form 5500)—2018 Plan Year
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For the purpose of calculating a joint and survivor optional form of benefit the following factors (as adjusted) shall be applied:

J&S Option	(1) Participant and Beneficiary Age 65 Nearest Birthday	(2) Adjustment for Retirement Age ¹	(3) Adjustment for Age Difference Between Participant and Beneficiary ²	
			Years 1–10	Years 11 & Over
50%	0.88	0.004	0.005	0.003
66.67%	0.85	0.005	0.006	0.003
75%	0.82	0.006	0.007	0.005
100%	0.78	0.007	0.008	0.005

In no event shall the factor in column (1) exceed 0.99 on account of an increase thereof provided under column (2) or column (3), or both.

For the purpose of calculating any other optional form of benefit available, mortality with reference to the UP-84 mortality table and 6.50% interest.

Plan Changes Since the Prior Year

The funding valuation does not reflect any plan changes.

¹ Increase/decrease factor in column (1) by appropriate factor in column (2) for each year, based on nearest birthday, participant retires before/after age 65, respectively.

² Decrease/increase factor in column (1) by appropriate factor in column (3) for each year, based on nearest birthday, beneficiary is younger/older than participant, respectively.

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Other Information to Fully and Fairly Disclose the Actuarial Position of the Plan

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Schedule SB, line 22—Description of Weighted Average Retirement Age

The average retirement age shown in line 22 has been calculated by assuming the following retirement rates and no decrements other than retirement for this calculation. All retirements are assumed to occur at beginning of year.

(a) Age	(b) Rate	(c) Weight	(d) Product (a) × (b) × (c)
55	5.00%	1.0000	2.75
56	5.00%	0.9500	2.66
57	5.00%	0.9025	2.57
58	5.00%	0.8574	2.49
59	5.00%	0.8145	2.40
60	7.00%	0.7738	3.25
61	9.00%	0.7196	3.95
62	12.00%	0.6549	4.87
63	16.00%	0.5763	5.81
64	23.00%	0.4841	7.13
65	28.00%	0.3727	6.78
66	28.00%	0.2684	4.96
67	26.00%	0.1932	3.37
68	25.00%	0.1430	2.43
69	25.00%	0.1072	1.85
70	100.00%	0.0804	5.63
Weighted Average			62.90

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Eligibility

Date of hire.

Service

Credited Service	From date of hire (maximum of 45 years).
Vesting Service	1,000 hours of service.

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Eligibility Age 65.

Benefit Benefit level per month multiplied by credited service:

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September 1, 2005	\$50.00 Plus 1/36 of contribution

Average Compensation

N/A

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Eligibility Age 55.

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Disability Retirement

Eligibility Age 45 and 10 years of service or 15 years of service.

Benefit Accrued benefit.

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Benefit

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Eligibility

Five years of service or age 55.

Benefit

Accrued benefit at age 55.

Severance Benefit

Eligibility

Fewer Than Five Years of Service

0%

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Benefit

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Normal Form of Payment

Married

Reduced 50% joint and survivor.

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Schedule SB, line 24—Change in Actuarial Assumptions

The funding valuation reflects the following assumption change:

- A change in the unlimited expected rate of return on assets from 5.50% to 5.25%.

This change was made to better reflect the anticipated plan experience. This assumption change did not reduce the funding shortfall; as such, approval of the Commissioner is not required.