



National Aeronautics and Space Administration

George C. Marshall Space Flight Center Marshall Space Flight Center, Alabama 35812

CLEANER, ORGANIC

Prepared by
Materials & Processes Laboratory
George C. Marshall Space Flight Center





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MSFC-SPEC-2489 July 19, 1995

Prepared by

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Approved by

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GEORGE C. MARSHALL SPACE FLIGHT CENTER NATIONAL AERONAUTICS AND SPACE ADMINISTRATION SPECIFICATION

CLEANER, ORGANIC

This specification has been approved by the George C. Marshall Space Flight Center (MSFC) and is available for use by MSFC and associated contractors.

1.0 SCOPE

This specification establishes the requirements for an environmentally compliant hand wipe cleaner. Refer to MSFC-QPL-2489 for a list of qualified materials which conform to these specification requirements.

2.0 APPLICABLE DOCUMENTS

2.1 GOVERNMENT DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposals shall apply.

SPECIFICATIONS

GEORGE C. MARSHALL SPACE FLIGHT CENTER

MSFC-OPL-2489

Qualified Products List, Products Qualified Under

George C. Marshall Space Flight Center

Specification MSFC-SPEC-2489, Cleaner, Organic

STANDARDS

MILITARY

MIL-STD-129

Marking for Shipment and Storage

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 NON-GOVERNMENT DOCUMENTS

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposals shall apply.

STANDARDS

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D 56 Flash Point by Tag Closed Tester, Standard Test Method for

ASTM D 86 Distillation of Petroleum Products, Standard Test Method for

ASTM D 611 Aniline Point and Mixed Aniline Point of Petroleum

Products and Hydrocarbon Solvents, Test Methods for

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.)

3.0 REQUIREMENTS

3.1 MATERIAL

The cleaner shall consist of a petroleum distillate meeting the requirements of this specification.

3.2 PHYSICAL PROPERTIES

Physical properties of the cleaner shall be in accordance with Table I.

TABLE I. Cleaner Physical Properties

Property	Requirement	Test Paragraph
Distillation Range	IBP 330°F min Dry Point 410°F max	4.7.1.1
Flash Point (TCC)	120°F, min	4.7.1.2
Aniline Point	182 °F, min	4.7.1.3

3.3 APPEARANCE

The cleaner shall be visually inspected with the unaided eye (corrective lenses permitted). The cleaner shall be a clear to translucent white liquid, free of foreign material.

3.4 SHELF LIFE AND STORAGE

The cleaner shall be stored at 0 to 120°F in the original sealed containers in a closed and vented facility away from direct sun or rain (see 5.3). The storage life under these conditions shall be 24 months from date of manufacture.

3.5 TOXIC PRODUCTS AND SAFETY

The vendor shall furnish a Material Safety Data Sheet (MSDS) to the procuring activity.

3.6 <u>SHELF LIFE EXTENSION REQUIREMENTS</u> (APPLICABLE TO THE PROCURING ACTIVITY ONLY)

Allowable shelf life extension shall be twelve months from the date of test on material taken from the original sealed container provided storage requirements have been met and the material passes all of the specified vendor lot acceptance tests in 4.5.1. Only one twelve month shelf life extension is permitted for this material.

4.0 QUALITY ASSURANCE PROVISIONS

4.1 <u>IN-PROCESS MATERIAL (APPLICABLE TO USERS)</u>

When the vendor container is opened at the user's site, the material is regarded as in-process material. In-process material can be used up to its certified shelf life provided that normal precautions are taken for handling and storage, including those precautions cited below.

- A. When in-process material is not in use, the material's container shall be closed immediately in a manner as closely as possible to its original state. Opening of containers for inspection of contents shall be limited to less than ten (10) minutes.
- B. Said container shall be stored in a safety approved location within a vented facility, away from direct sun or rain.
- C. For a given work station, opened containers shall be used to exhaustion before another vendor container of the material is opened for use at the station.
- D. If the integrity of in-process material is at any time suspect (e.g. agglomeration due to moisture absorption, not free-flowing, or failure of visual inspection criteria), then the material in question shall be either recertified per 3.6 or discarded.

4.2 **GENERAL PROVISIONS**

The vendor shall provide and maintain a quality control system in accordance with the requirements of the purchase document. Vendors shall only submit those materials which meet the requirements of this specification.

4.3 RESPONSIBILITY FOR INSPECTION AND TEST

4.3.1 Vendor

The vendor is responsible for the performance of all inspection and test requirements as specified herein. Unless otherwise indicated, the vendor may utilize his own or any other inspection facilities and services acceptable to the procuring activity. Records of the examination and tests shall be transported to the procuring activity with the material.

The vendor shall notify the procuring activity of any changes in formulation or procedures used in product manufacture.

4.3.2 Procuring Activity

The procuring activity is responsible for verifying acceptability of the vendor test data or vendor certifications of selected acceptance tests.

4.4 **OUALIFICATION TESTS (SEE ALSO 6.3.1)**

Qualification testing shall consist of all examinations and tests specified in Table II and any other tests as deemed necessary by the MSFC Materials and Processes Laboratory. The test data shall be submitted to the procuring activity. The lots subjected to the qualification tests shall be representative of the manufactured lot from the proposed production facility.

4.5 **OUALITY CONFORMANCE TESTS (SEE ALSO 6.3.2)**

4.5.1 Vendor Tests

The following tests specified in Table II are inspection tests for this specification which are to be performed by the vendor and reported to the procuring activity along with certifications of compliance to the requirements below.

Table II. VENDOR TESTS

Examination or Test	Requirement Paragraph	Examination or Test Paragraph
Distillation Range	3.2	4.7.1.1
Flash Point (TCC)	3.2	4.7.1.2
Aniline Point	3.2	4.7.1.3
Appearance *	3.3	3.3

^{*} Only a certification of compliance is required for this test, vendor test data not required.

4.6 SAMPLING

A sample of sufficient size to perform the required tests shall be randomly selected from each lot.

4.7 TEST METHODS

The following test methods and procedures shall be used. Unless otherwise specified in the test or procedure description, all weights, volumes, and temperatures shall be measured to the nearest specified unit or decimal. When a referenced document provides the test method description, that document applies only to the extent of specifying the method.

NOTE: Unless otherwise specified within this specification, reagent grade chemicals shall be used for chemical reactions in the conduct of all tests defined in this specification. Solvents and indicators may be commercial nonreagent grade materials unless otherwise specified within this specification.

4.7.1 Properties Tests

4.7.1.1 Distillation Range

Distillation shall be determined per ASTM D 86.

4.7.1.2 Flash Point (TCC)

Flash point shall be determined per ASTM D 56.

4.7.1.3 Aniline Point

Aniline point shall be determined per ASTM D 611.

4.8 REJECTION

Failure to meet any requirements of this specification is cause for rejection.

5.0 PREPARATION FOR DELIVERY

5.1 PACKAGING AND PACKING

Packaging and packing of the cleaner material shall be in accordance with standard commercial practice and in conformance to federal and state regulations applicable to the type of material. Containers in the same shipment shall be of the same size and of such construction and materials that the cleaner material will be adequately protected against loss or contamination.

MSFC-SPEC-2489 January 15, 2003

5.2 MARKING

Marking for shipment shall contain as a minimum:

a. Product /component Identification
b. Manufacturer's name
c. Batch Number or manufacturer Lot number

5.3 STORAGE

After receipt of the material, the procuring activity is responsible for storage.

6.0 NOTES

6.1 INTENDED USE

The material shall be used as a cleaner for flight or associated hardware.

6.2 ORDERING DATA

Purchase documents should specify the following:

- a. Title, number, and revision letter of this specification
- b. Types and quantity of material required

This specification requires procurement from vendors who are listed on the QPL for this specification.

6.3 <u>DEFINITIONS</u>

6.3.1 Qualification Tests

Qualification tests are those tests necessary to qualify a supplier as an approved source. Once the material is qualified, these tests need not be repeated, provided the formulation or process of manufacturer does not change.

6.3.2 Quality Conformance Tests

Quality conformance tests are those tests performed on each lot of material to verify compliance with specification requirements.

6.3.3 Lot

A lot shall consist of all material manufactured in the same production shift, from the same raw materials and by the same manufacturing process and submitted for acceptance at one time.

6.4 MODIFICATIONS OR CHANGES

Recommendations for modifications or changes to the requirements specified herein shall be submitted in writing to the Materials and Processes Laboratory at MSFC for consideration.

6.5 TYPICAL MATERIAL

Reveille Cleaner (Formula #02191) or Spirit 126 (Formula #04126) manufactured by Johnson Diversey is typical of the material covered by this specification.

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NOTICE

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

CUSTODIAN: PREPARING ACTIVITY:

NASA-George C. Marshall Space Flight Center

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SUPERSEDES PAGE 7, DATED APRIL 13 1999

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PREPARED BY: EUGENA GOGGANS

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	ı	V. EXI	PORT AND DISTRIBU	TION F	RESTRIC	CTIONS			
Privacy Act (see	•		☐ EAR (see M	MPG 222	0.1)				
Proprietary (see	-				•	nd MPG 160	0.1)		
☐ Patent (see MPC☐ ITAR (see MPG:	,						olicable material n SA domain	nay be	
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. ORG. CODE:	41. PHONE NUM	BER:	RIGINATING ORGANIZ 42. NAME:	AHON	APPR		NATURE/DATE:		
MP41	(256) 54	4-2729	M. J. Harris			M		us 2/14/03	
	VI. TO BE	COMP	PLETED BY MSFC DO	CUME	NTATIO	N REPOS	SITORY		
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l	MSFC DOCUMENT	ATION REPOSITORY	- DOCUMEN	TINPUT REC	ORD			
		I. GENERAL INFO						
1. APPROVED PROJECT:	1	:UMENT/ DRAWING NUMBER:	3. CONTROL NUME	BER: 4. RELEAS	E DATE: 5. SUB	MITTAL DATE:		
Shuttle Reusable Solid Motor, Solid Rocket F	Booster	MSFC-SPEC-2489		08/15/		3/07/2003		
6. DOCUMENT/DRAWING Cleaner, Organic	STITLE:			7. REPORT	TYPE:			
Cicarici, Organic					Specification	n		
8. CONTRACT NUMBER /	PERFORMING ACTIVITY:	9. DRD NUMBER:	······································	10. DPD / DRL / IDR	D NUMBER:	***************************************		
11. DISPOSITION AUTHO	RITY (Check One):	12. SUBMITTAL AUTHORITY:	***	13. RELEASING AU	THORITY:	 		
Official Record -	NRRS $S//2/A$	C D	***		1 h	1		
Reference Copy - (destroy when no	NRRS 8/5/A/3 longer needed)	C. Darrell De	weese	Dail H	ail H. Hordon			
15. CONTRACTOR/SUBM	ITTING ORGANIZATION, AL	DDRESS AND PHONE NUMBER:	16. ORIGINATING NAS	A CENTER:				
			17. OFFICE OF PRIMA Materials, Processe			t		
18. PROGRAMMATIC COI	DE (5 DIGITS): 376-50; 3	376-60	19.	NUMBER OF PAGE	S:			
		IL ENGINEERING	DRAWNES					
20. REVISION:	21. ENGINE	ERING ORDER: 22.	PARTS LIST:	23. C	CBD:			
24. REVISION:	25. CHANGE:	26. VOLUME:	27. BOOK:	28. PAR	Γ: 29. S	SECTION:		
30. ISSUE:	31. ANNEX:	32. SCN:	33. DCN:		34. AMENDMENT:			
35. APPENDIX:	36. ADDENDUM:	ADDENDUM: 37. CCBD:		D:	39. IRN:			
	IV. E	XPORT AND DISTRIBU	iionrestricii	(e)NEs				
Privacy Act (see	,	☐ EAR (see	,					
☐ Proprietary (see	· •		(see NPG 1620.1 and	•				
☐ ITAR (see MPG	•	No statuto electronica	ry or institutional restric ally distributed to user in	ctions applicable — r n the NASA domain	naterial may be			
		ORIGINATING ORGANIZ	ZATION APPROV	AL				
40. ORG. CODE:	41. PHONE NUMBER	<u> </u>		43. SIGNATURE	/1			
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	With Tolsetoid	MPLETEDIBY MSFORDO	CONTAINENT	RERESITERY				
44. RECEIVED BY:	, ,)		45. DATE RECEIVED		46. WORK ORDE	R:		
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MSi	C DOCUMEN	TATION REPOSITORY	- DOCUMEN	T INPL	JT REC	ORD				
		I. GENERAL INFO	RMATION							
1. APPROVED PROJECT:	2. DO	CUMENT/ DRAWING NUMBER:	3. CONTROL NUMBER:		4. RELEASE DAT		5. SUBMITTAL DATE:			
SRB/RSRM		MSFC-SPEC-2489	DPRS-1015	5R-1	6-4-	04	6-4-04			
6. DOCUMENT/DRAWING TITL	E:			7	7. REPORT	TYPE:				
Cleaner, Organic						Speci	fication			
8. CONTRACT NUMBER / PER	FORMING ACTIVITY:	9. DRD NUMBER:	10. DPD / DRL / IDRD NUMBER:							
11. DISPOSITION AUTHORITY Official Record - NRF	S 8/5/A/(C)	12. SUBMITTAL AUTHORITY:								
Reference Copy - NR (destroy when no ion	:RS 8/5/A/3 ger needed)	MP41/J. Mce	euen							
15. CONTRACTOR/SUBMITTIN	IG ORGANIZATION, A		6. ORIGINATING NAS	A CENTE	R:	· <u> </u>				
		ì	17. OFFICE OF PRIMARY RESPONSIBILITY: M&P							
18. PROGRAMMATIC CODE (5	DIGITS):	3766010	19.	NUMBER	OF PAGES	5:	1 3			
		II. ENGINEERING	DRAWINGS							
20. REVISION:	21. ENGIN		PARTS LIST:		23. Co	CBD:				
		III. REPORTS, SPECIFI	CATIONS, ETC	.						
24. REVISION:	25. CHANGE:	26. VOLUME:	27. BOOK:		28. PART	•	29. SECTION:			
30. ISSUE:	31. ANNEX:	32. SCN:	33. DCN:				DMENT:			
		SCN004								
35. APPENDIX:	36. ADDENDUM:	37. CCBD:	38. CODE ID:		39. IRN:					
		SB3-01-563 7 SM3-01-XXX X								
	IV.	EXPORT AND DISTRIBU	TION RESTRICT	TONS						
☐ Privacy Act (see MV☐ Proprietary (see MP		<u> </u>	/IPG 2220.1) see NPG 1620.1 and	I MPG 16	(00.1)					
Patent (see MPG 22		 ,	y or institutional resti ly distributed to user		•	material	may be			
☐ ITAR (see MPG 222	•	electronical	ly distributed to user	in the NA	ASA doma	in				
40. ORG. CODE:	V. DOCU	MENTATION SUBMITTER R: 42. NAME:	(NASA OR CO		TOR) GNATURE/	DATE:				
MP41	(256) 544-2	J. McEuen		1	- Hel	_	6/1/04			
	VI. TO BE CO	OMPLETED BY MSFC DO	CUMENTATION	REPO	SÍTORY	7				
44. RECEIVED BY:			45. DATE RECEIVED				K ORDER:			
			6-4-04	<i>t</i>		03-	00559-4			