



National Aeronautics and
Space Administration

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

CLEANER, ORGANIC WITH D-LIMONENE

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

Release Date: ____/____/____		Marshall Space Flight Center SPECIFICATION/DOCUMENT CHANGE INSTRUCTION		Page <u>1</u> of <u>1</u> Copy No.: _____
		Spec./Doc. No. <u>MSFC-SPEC-2490</u>		
Change No./Date	SCN/DCN No./Date	CCBD No./Date	Replacement Page Instructions	
	SCN 001 5-12-00		BASELINE INITIAL RELEASE Replace Page 3 with new Page 3	
ch 2	SCN 002	SB3-01- 5390 SM3-01- 5543	Remove MSFC-QPL-2490 from MSFC-SPEC-2490. The QPL will be baselined as a stand alone doc.	

MSFC-Form 4140 (Revised September 1990)

NOTE: After revising the document, file this sheet in document
preceding Table of Contents

Release Date:		Marshall Space Flight Center SPECIFICATION/DOCUMENT CHANGE INSTRUCTION		Page <u>1</u> of <u>1</u>
Specification/Document Number: MSFC-SPEC-2490			Copy Number:	
Change Number/Date	SCN/DCN Number/Date	CCBD Number/Date	Replacement Page Instructions	
2/18/03 Change 3 RELEASE	SCN 003	SB3-01-5547 & SM3-01-5742	Replace pages 3, 5, 6, and 7 with new pages 3, 5, 6 and 7.	

Marshall Space Flight Center
**SPECIFICATION CHANGE NOTICE/
DOCUMENT CHANGE NOTICE**

Page 1 of 1

Date: 5-12-00

Spec./Doc. No.:

MSFC-SPEC-2490

SCN/DCN. No. SCN 1

ECR No.: MP41-2182	PCN: 83001	Contract No.
CCBD No./Date: SB3-01-5313 SM3-01-5447	Page Number (s): Page 3	
Effectivity(ies): NFS		

Description of Change:

Incorporate changes for MP41-2182/SB3-01-5313 & SM3-01-5447

MSFC-SPEC-2490
July 19, 1995

Danell DeWitt

Prepared by

EH33

Organization

7/24/95

Date

Charles H. Mitchell

Approved by

EH31

Organization

7/24/95

Date

Paul H. Schuler

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EH-01

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7/25/95

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MATERIALS

Denny E. Hoff

MSFC-SPEC-2490
July 1995

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

CLEANER, ORGANIC WITH D-LIMONENE

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-2490 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-QPL-2490	Qualified Products List, Products Qualified Under George C. Marshall Space Flight Center Specification MSFC-SPEC-2490, Cleaner, Organic with D-Limonene
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STANDARDS

MIL-STD-129	Marking for Shipment and Storage
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(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 1298	Density, Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method, Standard Practice for
ASTM D 1353	Nonvolatile Matter in Volatile Solvents for use in Paint, Varnish, Lacquer, and Related Products, Standard Test Method for
ASTM D 4045	Sulfur in Petroleum Products by Hydrogenolysis and Rateometric Colorimetry, Test Method for
ASTM D 4052	Density and Relative Density of Liquids by Digital Density Meter, Standard Test Method for

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

EXXON CHEMICAL COMPANY

AM-S 140.31	Aromatic Content of Low Olefin Stocks, UV Absorption Method, April 1975.
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(Application for copies should be addressed to Exxon Chemicals, P.O. Box 5200, Baytown TX, 77520)

3.0 REQUIREMENTS**3.1 MATERIAL**

The cleaner shall consist of an organic base and shall meet the requirements of this specification.

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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 (Base Component)	365° - 430°F	4.7.1.1
Flash Point (TCC)	140° F minimum	4.7.1.2
Butyl Hydroxytoluene (BHT) Content	5 ppm, minimum	4.7.1.3
Percent Non-Volatile Solids	≤100 ppm	4.7.1.4
Specific Gravity	0.740 - 0.760	4.7.1.5
Sulfur Content	5 ppm,maximum	4.7.1.6
Percent Allowable Aromatic Hydrocarbon Content:	0.0 – 0.03 wt%	4.7.1.7

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3.3 APPEARANCE AND ODOR

The cleaner shall be a clear liquid, free of foreign material and have a faint citrus odor as determined by visual inspection with the unaided eye (corrective lenses permitted).

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 SHELF LIFE EXTENSION REQUIREMENTS (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 IN-PROCESS MATERIAL (APPLICABLE TO USERS)**

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 or odor 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.

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4.4 QUALIFICATION TESTS (SEE ALSO 6.3.1)

Qualification testing shall consist of all examinations and tests specified in Tables II and III 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 QUALITY 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 (Base Component)	3.2	4.7.1.1
Flash Point (TCC)	3.2	4.7.1.2
Percent Non-Volatile Solids	3.2	4.7.1.4
Specific Gravity	3.2	4.7.1.5
Visual/Odor	3.3	3.3

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4.5.2 Vendor Certifications

The vendor shall supply certifications of compliance for the tests in Table III.

Table III. Certification Requirements

Examination or Test	Requirement Paragraph	Examination or Test Paragraph
Butyl Hydroxytoluene Content	3.2	4.7.1.3
Sulfur Content	3.2	4.7.1.6
Aromatic Hydrocarbon Content	3.2	4.7.1.7

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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 range of the base component 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 BHT

BHT content shall be verified based on the following, which shall be shipped with each lot PF Degreaser:

A. **Orange Terpene:** The PF Degreaser manufacturer shall provide the subvendor's Orange Terpene Certificate of Analysis verifying that 0.015 wt% BHT was added to the Orange Terpene used in the manufacture of the PF Degreaser. Certification shall include the Orange Terpene lot number and the Gas Chromatograph results verifying the presence of BHT.

B. **PF Degreaser:** PF Degreaser Certificate of Analysis from its manufacturer with Pass/Fail Criterion for 5 ppm, minimum BHT content and a Pass/Fail Criterion for 0.08 wt. Fraction Orange Terpene with corresponding Lot Number to one (A) above used in the formulation of PF Degreaser.

A quantitative test method is acceptable in lieu of the information required by A and B above and shall be pre-coordinated with the procuring agency.

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4.7.1.4 Percent Non-Volatile Solids

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The percent of non-volatile solids shall be determined by either ASTM D 1353 Modified (10 gram sample at 105° +/- 5° C) or the following gravimetric method.

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- A. Weigh a clean dry Teflon weighing dish to the nearest 0.1 mg.
- B. Add a 10 ml sample of the cleaner to the weighing dish and reweigh to the nearest 0.1 mg.
- C. Place the weighing dish on a hotplate at 70°C max and heat until no liquid is visible.
- D. Reweigh the Teflon dish to the nearest 0.1 mg and calculate the percent non-volatile solids.

4.7.1.5 Specific Gravity

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Specific gravity shall be determined per ASTM D 1298 or ASTM D 4052.

4.7.1.6 Sulfur Content

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Sulfur content shall be determined per ASTM D 4045.

4.7.1.7 Percent Allowable Aromatic Hydrocarbon Content

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Aromatic hydrocarbon content shall be determined per AM-S 140.31, April 1975 revision.

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.

5.2 MARKING

Marking for shipment shall contain as a minimum:

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

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5.3 STORAGE

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

Supersedes page 7, dated July 1995

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 DEFINITIONS**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.

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6.5 **TYPICAL MATERIAL**

PF Degreaser manufactured by PT Technologies, Inc. is typical of the material covered by this specification.

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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PACKAGE NO. 9245R

DOCUMENTATION RELEASE LIST
GEORGE C. MARSHALL SPACE FLIGHT CENTERMSFC CODE IDENT 14981
ISSUE DATE MAY 26 2000

PAGE 1

C H	DOCUMENT NUMBER	DRL DRL DSH REV	TITLE	CCBD NO.	PCN	PC	EFFECTIVITY

*	MSFC-SPEC-2490	202 -	CLEANER, ORGANIC WITH D-LIMONENE	000-00-0000	0000000	ZA	1

CHG NO.	CHG REV	CHG NOTICE	RESPONSIBLE ENGINEER	RESPONSIBLE ORGANIZATION	ACTION DATE	DESCRIPTION	

			R. A. MCFARLAND	EH43	08/15/95	BASELINE RELEASE	

*	1	SCN001	DENNIS GRIFFIN	MP41	05/26/00	RELEASES CHANGE PAGES AUTHORIZED BY ECR MP41-2182, CCBD SB3-01-5313 & SM3-01-5447.	

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DON HAMILTON
05/25/00

(FINAL)

FILE NO. MSFC-SPEC-2490

203 -

DR060PR0

PACKAGE NO. 9414R

DOCUMENTATION RELEASE LIST
GEORGE C. MARSHALL SPACE FLIGHT CENTERMSFC CODE IDENT 14981
ISSUE DATE NOV 27 2000

PAGE 1

C H	DOCUMENT NUMBER	DRL DRL DSH REV	TITLE	CCBD NO.	PCN	PC	EFFECTIVITY
*	MSFC-SPEC-2490	203 -	CLEANER, ORGANIC WITH D-LIMONENE	000-00-0000	83001	ZA	1

CHG NO.	CHG REV	CHG NOTICE	RESPONSIBLE ENGINEER	RESPONSIBLE ORGANIZATION	ACTION DATE	DESCRIPTION
			R. A. MCFARLAND	EH43	08/15/95	BASELINE RELEASE
	1	SCN001	DENNIS GRIFFIN	MP41	05/26/00	RELEASES CHANGE PAGES AUTHORIZED BY ECR MP41-2182, CCBD SB3-01-5313 & SM3-01-5447.
*	2	SCN002	GREG BOWEN	MP41	11/27/00	UPDATE MSFC-SPEC-2490 BY REMOVING & BASELINING THE QPL AS A STAND ALONE DOC. AUTHORIZED BY SB3-01-5390, SM3-01-5543.

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DON HAMILTON
11/22/00

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FILE NO. MSFC-SPEC-2490

204 -

DR060PR0

PACKAGE NO. 9963R

DOCUMENTATION RELEASE LIST
GEORGE C. MARSHALL SPACE FLIGHT CENTER

MSFC CODE IDENT 14981

ISSUE DATE FEB 18 2003

PAGE 1

C H	DOCUMENT NUMBER	DRL DRL DSH REV	TITLE	CCBD NO.	PCN	PC	EFFECTIVITY
*	MSFC-SPEC-2490	204 -	CLEANER, ORGANIC WITH D-LIMONENE	000-00-0000	83001	ZA	1
CHG NO.	CHG REV	CHG NOTICE	RESPONSIBLE ENGINEER	RESPONSIBLE ORGANIZATION	ACTION DATE	DESCRIPTION	
			R. A. MCFARLAND	EH43	08/15/95	BASELINE RELEASE	
1		SCN001	DENNIS GRIFFIN	MP41	05/26/00	RELEASES CHANGE PAGES AUTHORIZED BY ECR MP41-2182, CCBD SB3-01-5313 & SM3-01-5447.	
2		SCN002	GREG BOWEN	MP41	11/27/00	UPDATE MSFC-SPEC-2490 BY REMOVING & BASELINING THE QPL AS A STAND ALONE DOC. AUTHORIZED BY SB3-01-5390, SM3-01-5543.	
* 3		SCN003	MARY JO HARRIS	MP41	02/18/03	REPLACE PAGES 3,5,6, AND 7. (SB3-01-5547, SM3-01-5742)	

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02/18/03

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FILE NO. MSFC-SPEC-2490

205 -

DR060PR0

PACKAGE NO. 10443R

DOCUMENTATION RELEASE LIST
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ISSUE DATE FEB 22 2007

PAGE 1

C H	DOCUMENT NUMBER	DRL DRL DSH REV	TITLE	CCBD NO.	PCN	PC	EFFECTIVITY
*	MSFC-SPEC-2490	205 -	CLEANER, ORGANIC WITH D-LIMONENE	000-00-0000	0000000	ZA	NONE

CHG NO.	CHG REV	CHG NOTICE	RESPONSIBLE ENGINEER	RESPONSIBLE ORGANIZATION	ACTION DATE	DESCRIPTION
			R. A. MCFARLAND	EH43	08/15/95	BASELINE RELEASE
1		SCN001	DENNIS GRIFFIN	MP41	05/26/00	RELEASES CHANGE PAGES AUTHORIZED BY ECR MP41-2182, CCBD SB3-01-5313 & SM3-01-5447.
2		SCN002	GREG BOWEN	MP41	11/27/00	UPDATE MSFC-SPEC-2490 BY REMOVING & BASELINING THE QPL AS A STAND ALONE DOC. AUTHORIZED BY SB3-01-5390, SM3-01-5543.
3		SCN003	MARY JO HARRIS	MP41	02/18/03	REPLACE PAGES 3,5,6, AND 7. (SB3-01-5547, SM3-01-5742)
*	4	SCN000	EUGENA GOGGANS	EO03	02/22/07	DOCUMENT RELEASED THRU PDS. NO LONGER TRACKED IN ICMS.

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N/A
02/15/07

(FINAL)

DOCUMENTATION PACKAGE/ROUTING REPORT

02/22/07 DR120PRO PAGE 1

PACKAGE NO: 10443R

PROGRAM/PROJECT: MULTI

LAST UPDATED: 02/22/07

NOMENCLATURE: MSFC-STD- GOING TO NONE EFFECTIVITY

ECR NO:	PCN:	CCBD NO:	DATE PREPARED:
EO03-0000	0000000	000-00-0000	02/22/07
		SB3-00-0000	

DWG SIZE	DRAWING NUMBER	DWG REV	EPL/DRL/DDS NUMBER	DWG REV	EPL DSH	EPL REV	EO DASH NUMBER	EO REV	PART NUMBER
			MSFC-HDBK-1453		202	-			
			MSFC-HDBK-1674		202	-			
			MSFC-HDBK-2221		203	-			
			MSFC-HDBK-505		202	-			
			MSFC-HDBK-670		202	-			
			MSFC-MNL-1951		209	-			
			MSFC-PROC-1301		202	-			
			MSFC-PROC-1721		202	-			
			MSFC-PROC-1831		202	-			
			MSFC-PROC-1832		202	-			
			MSFC-PROC-404		202	-			
			MSFC-PROC-547		202	-			
			MSFC-QPL-1918		204	-			
			MSFC-RQMT-1282		202	-			
			MSFC-SPEC-1198		202	-			
			MSFC-SPEC-1238		202	-			
			MSFC-SPEC-1443		202	-			
			MSFC-SPEC-164		202	-			
			MSFC-SPEC-1870		202	-			
			MSFC-SPEC-1918		203	-			
			MSFC-SPEC-1919		206	-			
			MSFC-SPEC-2083		202	-			
			MSFC-SPEC-2223		202	-			
			MSFC-SPEC-2489		206	-			
			MSFC-SPEC-2490		205	-			
			MSFC-SPEC-2491		203	-			
			MSFC-SPEC-2492		203	-			
			MSFC-SPEC-2497		211	-			
			MSFC-SPEC-250		202	-			
			MSFC-SPEC-445		202	-			
			MSFC-SPEC-504		202	-			
			MSFC-SPEC-521		202	-			
			MSFC-SPEC-548		202	-			
			MSFC-SPEC-560		202	-			
			MSFC-SPEC-626		202	-			
			MSFC-SPEC-684		202	-			
			MSFC-SPEC-708		202	-			
			MSFC-SPEC-766		202	-			
			MSFC-STD-1249		202	-			
			MSFC-STD-1800		202	-			
			MSFC-STD-246		202	-			
			MSFC-STD-2594		203	-			

DOCUMENTATION PACKAGE/ROUTING REPORT

02/22/07 DR120PR0 PAGE 2

PACKAGE NO: 10443R

DWG SIZE	DRAWING NUMBER	DWG REV	EPL/DRL/DDS NUMBER	DWG REV	EPL DSH	EPL REV	EO DASH NUMBER	EO REV	PART NUMBER
			MSFC-STD-2903		202	-			
			MSFC-STD-2904		202	-			
			MSFC-STD-2905		202	-			
			MSFC-STD-2906		202	-			
			MSFC-STD-2907		202	-			
			MSFC-STD-366		202	-			
			MSFC-STD-383		202	-			
			MSFC-STD-486		202	-			
			MSFC-STD-506		203	-			
			MSFC-STD-531		202	-			
			MSFC-STD-557		202	-			
			MSFC-STD-561		203	-			
			MSFC-STD-781		202	-			

SUBMITTED BY ENGINEERING AREA:	BASIC	CHANGE	PARTIAL	COMPLETE	CLOSES	ACTION
EO03		X		X	EO03	

PREPARED BY:
EUGENA GOGGANS
12/19/06

SUBMITTED BY:

CONCURRENCE:

TRANSMITTAL DATES
TO RELEASE DESK 02/22/07 10:00
TO MSFC DOC REP 02/22/07 00:00

REMARKS:

2007 FEB 22 AM 11:22

DOCUMENT INPUT RECORD**I. TO BE COMPLETED UPON SUBMITTAL OF DATA**

1. APPROVED PROJECT: SRB/RSRM	2. DOCUMENT/DRAWING NO.: MSFC-SPEC-2490	3. CONTROL NUMBER: DPRS # 9414R	4. DOCUMENT RELEASE DATE: 11/29/2000	5. SUBMITTAL DATE: 11/28/2000
6. DOCUMENT/DRAWING TITLE: Cleaner, Organic with D-Limonene				7. REPORT TYPE: Specification
8. CONTRACT NO./PERFORMING ACTIVITY:		9. DRD NUMBER:		10. DPD / DRL / IDRD NUMBER:
11. DISPOSITION AUTHORITY (official records only):		12. SUBMITTAL AUTHORITY: MP41/M. Harris		13. RELEASING AUTHORITY: ED34/D. DeWeese
14. SPECIAL INSTRUCTIONS: Same distribution as Basic release				
15. CONTRACTOR/SUBMITTING ORGANIZATION, ADDRESS AND PHONE NUMBER: MSFC			16. ORIGINATING NASA CENTER: MSFC	
			17. OFFICE OF PRIMARY RESPONSIBILITY: M&P	
18. KEYWORDS:			19. NUMBER OF PAGES: 4 CB	20. SECURITY CLASSIFICATION OF REPORT: Unclassified

II. TO BE COMPLETED FOR ENGINEERING DRAWINGS

21. REVISION:	22. ENG. ORDER:	23. PARTS LIST:	24. CCBD:
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III. TO BE COMPLETED FOR REPORTS, SPECIFICATIONS, ETC.

25. REVISION: Basic	26. CHANGE: 2	27. VOLUME:	28. BOOK:	29. PART:	30. SECTION:
31. ISSUE:	32. ANNEX:	33. SCN: 002	34. DCN:	35. AMENDMENT:	
36. APPENDIX:	37. ADDENDUM:	38. CCBD:	39. CODE ID:	40. IRN:	

IV. EXPORT AND DISTRIBUTION RESTRICTIONS

<input type="checkbox"/> Privacy Act (see MWI 1382.1)	<input type="checkbox"/> EAR (see MPG 2220.1)
<input type="checkbox"/> Proprietary (see MPD 2210.1)	<input checked="" type="checkbox"/> No statutory or institutional restrictions applicable -- material may be distributed to public (including placement on the World Wide Web)
<input type="checkbox"/> Patent (see MPG 2220.1)	<input type="checkbox"/> ACI (see MPG 1600.1)
<input type="checkbox"/> ITAR (see MPG 2220.1)	

V. ORIGINATING ORGANIZATION APPROVAL

41. NAME: Mary Jo Harris	42. SIGNATURE: Mary Jo Harris	43. ORG. CODE: MP41	44. PHONE NUMBER: 544-2729	45. DATE: 11/29/00
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VI. TO BE COMPLETED BY MSFC DOCUMENTATION REPOSITORY

46. RECEIVED BY: Hope Rayburn	47. DATE RECEIVED: 11/29/00	48. WORK ORDER: 0200313
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MSFC DOCUMENTATION REPOSITORY - DOCUMENT INPUT RECORD

I. GENERAL INFORMATION

1. APPROVED PROJECT: SRB/RSRM	2. DOCUMENT/ DRAWING NUMBER: MSFC-SPEC-2490	3. CONTROL NUMBER: DPRS-9963R-3	4. RELEASE DATE: 2-18-03	5. SUBMITTAL DATE: 2-18-03
6. DOCUMENT/DRAWING TITLE: Hand Wipe Cleaning, Requirement for			7. REPORT TYPE: Specification	
8. CONTRACT NUMBER / PERFORMING ACTIVITY:		9. DRD NUMBER:	10. DPD / DRL / IDRD NUMBER:	
11. DISPOSITION AUTHORITY (Check One): <input checked="" type="checkbox"/> Official Record - NRRS 8/5/A/1E <input checked="" type="checkbox"/> Reference Copy - NRRS 8/5/A/3 (destroy when no longer needed)		12. SUBMITTAL AUTHORITY: MP41/M. Harris		13. RELEASING AUTHORITY:
14. SPECIAL INSTRUCTIONS:				
15. CONTRACTOR/SUBMITTING ORGANIZATION, ADDRESS AND PHONE NUMBER:			16. ORIGINATING NASA CENTER: MSFC	
			17. OFFICE OF PRIMARY RESPONSIBILITY: M&P	
18. PROGRAMMATIC CODE (5 DIGITS):			19. NUMBER OF PAGES: 6	

II. ENGINEERING DRAWINGS

20. REVISION:	21. ENGINEERING ORDER:	22. PARTS LIST:	23. CCBD:

III. REPORTS, SPECIFICATIONS, ETC.

24. REVISION: Basic	25. CHANGE: 003	26. VOLUME:	27. BOOK:	28. PART:	29. SECTION:
30. ISSUE:	31. ANNEX:	32. SCN: SCN003	33. DCN:	34. AMENDMENT:	
35. APPENDIX:	36. ADDENDUM:	37. CCBD: SB3-01-5547 & SM3-01-5742	38. CODE ID:	39. IRN:	

IV. EXPORT AND DISTRIBUTION RESTRICTIONS

<input type="checkbox"/> Privacy Act (see MW 1382.1)	<input type="checkbox"/> EAR (see MPG 2220.1)
<input type="checkbox"/> Proprietary (see MPD 2210.1)	<input type="checkbox"/> Other ACI (see NPG 1620.1 and MPG 1600.1)
<input type="checkbox"/> Patent (see MPG 2220.1)	<input checked="" type="checkbox"/> No statutory or institutional restrictions applicable -- material may be electronically distributed to user in the NASA domain
<input type="checkbox"/> ITAR (see MPG 2220.1)	

V. ORIGINATING ORGANIZATION APPROVAL

40. ORG. CODE: MP41	41. PHONE NUMBER: (256) 544-2729	42. NAME: M. J. Harris	43. SIGNATURE/DATE: Mary J. Harris 2/14/03
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VI. TO BE COMPLETED BY MSFC DOCUMENTATION REPOSITORY

44. RECEIVED BY: J. F. D. Lane	45. DATE RECEIVED: 2/18/03	46. WORK ORDER: 03-00346-3
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MSFC DOCUMENTATION REPOSITORY - DOCUMENT INPUT RECORD

I. GENERAL INFORMATION

1. APPROVED PROJECT: Shuttle Reusable Solid Rocket Motor, Solid Rocket Booster	2. DOCUMENT/ DRAWING NUMBER: MSFC-SPEC-2490	3. CONTROL NUMBER:	4. RELEASE DATE: 08/15/1995	5. SUBMITTAL DATE: 08/07/2003
6. DOCUMENT/DRAWING TITLE: Cleaner, Organic with D-Limonene			7. REPORT TYPE: Specification	
8. CONTRACT NUMBER / PERFORMING ACTIVITY:	9. DRD NUMBER:	10. DPD / DRL / IDRD NUMBER:		
11. DISPOSITION AUTHORITY (Check One): <input checked="" type="checkbox"/> Official Record - NRRS 8/12/1A <input type="checkbox"/> Reference Copy - NRRS 8/5/A/3 (destroy when no longer needed)		12. SUBMITTAL AUTHORITY: C. Darrell DeWeese		13. RELEASING AUTHORITY: <i>Gail H. Gordon</i>
14. SPECIAL INSTRUCTIONS:				
15. CONTRACTOR/SUBMITTING ORGANIZATION, ADDRESS AND PHONE NUMBER:		16. ORIGINATING NASA CENTER: MSFC		
		17. OFFICE OF PRIMARY RESPONSIBILITY: Materials, Processes, and Manufacturing Department		
18. PROGRAMMATIC CODE (5 DIGITS): 376-50; 376-60			19. NUMBER OF PAGES:	

II. ENGINEERING DRAWINGS

20. REVISION:	21. ENGINEERING ORDER:	22. PARTS LIST:	23. CCBD:

III. REPORTS, SPECIFICATIONS, ETC.

24. REVISION:	25. CHANGE:	26. VOLUME:	27. BOOK:	28. PART:	29. SECTION:
30. ISSUE:	31. ANNEX:	32. SCN:	33. DCN:	34. AMENDMENT:	
35. APPENDIX:	36. ADDENDUM:	37. CCBD:	38. CODE ID:	39. IRN:	

IV. EXPORT AND DISTRIBUTION RESTRICTIONS

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 ☐ EAR (see MPG 2220.1)
- ☐ Proprietary (see MPD 2210.1)
 ☐ Other ACI (see NPG 1620.1 and MPG 1600.1)
- ☐ Patent (see MPG 2220.1)
 ☒ No statutory or institutional restrictions applicable -- material may be electronically distributed to user in the NASA domain
- ☐ ITAR (see MPG 2220.1)

V. ORIGINATING ORGANIZATION APPROVAL

40. ORG. CODE: ED34	41. PHONE NUMBER: (256) 544-5120	42. NAME: C. Darrell DeWeese	43. SIGNATURE/DATE: <i>C. Darrell DeWeese</i>
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VI. TO BE COMPLETED BY MSFC DOCUMENTATION REPOSITORY

44. RECEIVED BY: <i>Jammy Wise</i>	45. DATE RECEIVED: 10-15-03	46. WORK ORDER:
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