

WASC 2331 ●

Compatibility of Explosives
with Polymers.

(Reaction Arsenal)

CDR PR/251/81

T163/3/70/39

E9B

PLASTEC REPORT 33

WAM/172/01

COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II)
**(An Addendum to Picatinny Arsenal
Technical Report 2595)**



APRIL 1968



PLASTICS TECHNICAL EVALUATION CENTER

PICATINNY ARSENAL
DOVER, NEW JERSEY

PLASTECH Publications

Unless marked with an asterisk (*) below, all reports can be purchased from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia, 22151, at a price of \$3.00 each.

Rpt	Identification	
1	State of the Art-Flake Glass Laminates, by A. M. Shibley, Oct 1960	AD 244 104
2	Oxygen-Alcohol Test for Insulating Materials - A Memorandum on a Screening Test for Rocket-Motor Blast Tubes, by H. F. Mannheimer and A. M. Shibley, Oct 1960	AD 245 498
3	Recent Developments in Casting Resins and Technology for Electrical Encapsulation Applications, by A. E. Molzon, Nov 1960	AD 247 865
4	Design Criteria for Plastic Package-Cushioning Materials, by M. E. Gigliotti, Dec 1961	AD 273 400
5B	Directory in Plastics - Knowledgeable Government Personnel (Revised), by N. E. Beach, Sept 1966	AD 642 574
6	State of the Art-Methods of Bonding Fluorocarbon Plastics to Structural Materials, by Marjorie C. St. Cyr, May 1961	AD 261 549
7	Guide to Specifications for Rigid Laminated Plastics, by Ruth S. Kobler and Cecilia U. McNally, March 1962	AD 276 142
8	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Mar 1960 - Feb 1961, by A. E. Molzon, July 1961	AD 264 775
9*	Reduction of Reflectivity from Transparent Materials: A Memorandum in Evaluation of Techniques Applicable to Plastic Helicopter Canopies, by N. E. Beach, July 1962	AD 294 117
10*	A Survey of Filament Winding: Materials, Design Criteria, Military Applications, by A. M. Shibley, H. L. Perjitt, and M. Eig, May 1962	AD 284 629
11	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Feb 1961 - Feb 1962, by A. E. Molzon, June 1962	AD 282 795
12	Effects of the Space Environment on Plastics: A Summary with Annotated Bibliography, by A. H. Landrock, July 1962	AD 288 682
13	Fluidized-Bed Coating with Plastics: Technology and Potential for Military Applications, by A. H. Landrock, Jan 1964	AD 431 603
14	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Feb 1962 - Feb 1963, by A. E. Molzon, Aug 1963	AD 423 560
15	A Review of Plastics for Tooling: Materials, Techniques, Tool Design, by N. T. Baldanza, March 1964	AD 601 391
16	Plastic Gears: A Memorandum on Feasibility for Use in Ammunition Items, by John Nardone, July 1964	AD 605 396
17	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Feb 1963 - Mar 1964, by A. E. Molzon, July 1964	AD 606 561
18	Glass Resin Interface: Patent Survey, Patent List, and General Bibliography, by W. J. Eakins, Sept 1964	AD 609 526
19*	Filament Winding Bibliography: Evaluated and Annotated, by A. M. Shibley, Dec 1964	AD 457 593
20*	Properties of Plastics and Related Materials at Cryogenic Temperatures, by A. H. Landrock, July 1965	AD 469 126
21	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Mar 1964 - Mar 1965, by Joan B. Titus and A. E. Molzon, June 1965	AD 620 142
22*	A Review of Nondestructive Testing for Plastics: Methods and Applications, by N. T. Baldanza, Aug 1965	AD 472 712
23	Electrical Properties of Plastic Materials; Data Compiled from Technical Conference Search, by A. E. Molzon, July 1965	AD 624 922
24	Weathering of Glass Reinforced Plastics, by G. R. Rugger and Joan B. Titus, Jan 1966	AD 630 987
25	Compatibility of Plastics with Liquid Propellants, Fuels and Oxidizers, by N. E. Beach, Jan 1966	AD 632 287
26	Fiber Reinforced Thermoplastics: Applications, Molding Techniques, and Performance Data, by N. T. Baldanza, May 1966	AD 637 721
27	Subject Index, Bibliography, and Code Description of Technical Conference Papers on Plastics: Mar 1965 - Mar 1966, by Joan B. Titus and A. E. Molzon, July 1966	AD 641 666

*Not on public sale.

CONTINUED AT BACK.

UNCLASSIFIED
Defence - Use - Only

LS/ 2687c

PROCUREMENT EXECUTIVE, MINISTRY OF DEFENCE
PERME WALTHAM ABBEY

LIBRARY SERVICES (REPORTS SECTION)

THIS REPORT IS ON LOAN FROM AN OUTSIDE ORGANISATION/
REQUIRED BY OTHERS.
DO NOT PASS DIRECT TO OTHERS.

PLEASE RETURN TO REPORTS SECTION FOR FURTHER
CIRCULATION WITHIN

Comments and the names of others with a "need to know"
may be added below.

TRANSIT

COMMENTS

9 SEP 1981

Mr. R. W. Richards

COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II)
(An Addendum to Picatinny Arsenal Technical Report 2595)

by

NORMAN E. BEACH
Plastics Technical Evaluation Center

and

VINCENT K. CANFIELD
Stability Testing and Evaluation Section
Picatinny Arsenal

APRIL 1968

PLASTICS TECHNICAL EVALUATION CENTER
Picatinny Arsenal, Dover, New Jersey 07801

ABSTRACT

A roundup of data on the compatibility of explosives with polymers was made by Miss Marjorie St Cyr in the years immediately prior to 1959. This work was reported as PATR 2595, dated March 1959.

The work herein reported covers the explosives/plastics compatibility data from 1959 through 1967. The effort has been to include all available hard data from the United Kingdom, Canada, Australia and these United States.

The present study is given simplified form: in alphabetical order (first) by trade name or generic name of the plastic and (second) by explosive. By this means the reader can tell (first) what explosives a plastic is compatible with and (second) what plastics can be used safely with a particular explosive.

For this report, the search was stretched to include adhesives and elastomers.

CONTENTS

	<u>Page</u>
ABSTRACT	iii
INTRODUCTION	1
Background	1
Local History of Compatibility Testing	1
Test Methods	2
Precaution	2
PART ONE - COMPATIBILITY OF PLASTICS WITH EXPLOSIVES	3
PART TWO - COMPATIBILITY OF EXPLOSIVES WITH PLASTICS	39
APPENDIXES	
A. Source of Information, with Examples of Within- Report Reference Numbers	65
B. Methods Employed in Testing for Compatibility	66
C. Proportions of the Contact Materials used in the Reactivity Test at Picatinny Arsenal as Reported Herein	71

INTRODUCTION

BACKGROUND

In the years immediately prior to 1959, Miss Marjorie St Cyr of the Plastics and Packaging Laboratories (Picatinny Arsenal) made a roundup of data on the compatibility of explosives with polymers. This study was published as Picatinny Arsenal Technical Report No. 2595 (AD 310 262), March 1959.

Compatibility data have continued to accrue, at this Arsenal and elsewhere. The size of this report suggests that the time had arrived at which another summarization was in order. The need for this was pointed out by the Tripartite Technical Cooperative Panel; and an appeal was made to the United Kingdom, Canada and Australia for hard data with which to enrich this report. In addition, other USA sources of data were solicited.

Appendix A lists all sources used in this study and gives examples of the method of identification for each source, as used in this report.

LOCAL HISTORY OF COMPATIBILITY TESTING

Explosives compatibility testing at Picatinny Arsenal started in the early years of World War II. The concept was brought about by the fortuitous concurrence of (1) a need to know what had happened to certain ordnance material and (2) the development of a test which, under closely controlled conditions, could tell if something (breakdown) was happening. As an illustration, something did happen to a particular lot of grenades. It was found that the grenades had rusted internally prior to their loading, and that they were loaded with WC ball powder (a single base propellant grain with a nitroglycerine coating). Through a series of reactivity tests (as described in Appendix B) of the iron rust in contact with all of the main ingredients of the WC ball powder, it was discovered that nitroglycerine and iron rust (surprisingly) are extremely unhappy when in contact.

From this detective-type work, it was a short and logical step to require preknowledge of the compatibility of explosives with the inert materials with which they were designed for contact. Many, many materials are compatible; only very few are extremely unfriendly. However, unless there is back-up information in considerable quantity and variety, it is unsafe ever to assume satisfactory compatibility behavior for any combinations involving explosives or propellants. To illustrate, two fairly well behaved materials are amatol and hydrocarbon wax. Put them together and they will fire in 20 minutes at 100 C.

It is the middle ground which is of greatest concern to the design engineer; the decision as to how much reaction between explosive and inert material can be tolerated in ammunition designed for 10 to 20 years of shelf life or storage.

PART ONE - COMPATIBILITY OF PLASTICS WITH EXPLOSIVES

Herein (under RATING): Excess = "excessive"; Mod. = "moderate"; Neglig. = "Negligible";
 Comp. = "compatible"; Not comp. = "incompatible"; n/a = "not applicable".
 Also, NT = "no test".

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
ABS - Acrylonitrile/butadiene/styrene; see also "Cycolac"						
ABS	Propellant NH	-	1 yr	60	None/ slight	WAM/172/01; ERDE 70/M/65
"	Propellant NQ	-	1 yr	60	Severe	"
"	RDX/TNT	-	1 yr	60	Mod.	"
"	TNT	-	1 yr	60	"	"
Acetal - see "Delrin"						
Acrylic, Zefran fiber	Propellant T36	11+	20	100C	Excess	AL-S-99-63
Acrylic/rayon blend	Propellant M6, OKLA 32410	-0.39	40	100	Neglig.	AL-S-14-63
Acrylafil G40/35	Composition C4	0.05	40	100	Neglig.	AL-S-43-65
Activator A (for epoxy)	Potassium chlorate/ aluminum (60/40)	-0.10	40	100	"	AL-S-36-59
"	"	0.22	40	100	"	"
Acrylonitrile rubber gasket, w/brass contact	Propellant NH, vapors	-	3-7 mo	60	Not rec- ommen- ded	ERDE 9/M/53
"	Propellant NQ, vapors	-	3-7 mo	60	"	"
Acrylonitrile/Styrene	Propellant NH	-	1 yr	60	None/ slight	ERDE 70/M/65
"	Propellant NQ	-	1 yr	60	Severe	"
"	TNT	-	1 yr	60	Mod.	"
"	RDX/TNT	-	1 yr	60	"	"
Adhesive - see also "Armstrong... "Bondmaster", "Bostik", "cement", "Epon", "epoxy", "Fuller 7003"						
Adhesive (3M) PAPD 2595	Explosive sheet, EL-506C	0.08	40	100	Neglig.	AL-S-50-62
Adhesive 43D-D16 (cured) (Dewey & Almey Chem)	Composition B	0.25	40	100	"	AL-S-76-66
" (uncured)	"	0.08	40	100	"	"
Adhesive, 828/140* (ground fine)	"	4.32	40	100	Mod.	AL-S-67-62
" (as received)	"	0.12	40	100	Neglig.	"
*See also "Epon... Versamid"						
Adhesive, AK21D (cured 2 hr @ 350 F)	Composition B	0.51	40	100	Neglig.	AL-S-100-62
"	Composition B (stored 6 mo @ 51 C)	-0.30	40	100	"	"
"	Octol (75/25)	-0.19	40	100	"	"
"	Octol (75/25) (stored 6 mo @ 50 C)	-0.49	40	100	"	"
Adhesive, Angier SW 608 (grey enamel)	Propellant M7	0.55	40	90	"	AL-S-5-64
"	"	0.02	40	90	"	"
Adhesive, Bostik 1816-541	DATB/Teflon (94/6)	11+	16	120	Excess	AL-S-30-63
"	"	-1.02	40	100	Neglig.	"
Adhesive, Eastman 910 (uncured)	Propellant M2	-0.45	40	100	"	AL-S-26-66
"	"	0.92	40	100	"	"
(cured)						
"	Propellant M8	3.83	40	90	Mod.	AL-S-41-63
"	RDX	-0.94	40	100	Neglig.	AL-S-179-67
(uncured)						

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Adhesive, EC 2186-2 (3M) (cured)	Composition B-4	2.65	40	100	Neglig.	AL-S-99-64
Adhesive, EC 2216 (3M) A & B (uncured)	RDX	11+	40	100	Excess	AL-S-73-65
"	PETN	3.63	40	100	Mod.	"
Adhesive, R86020 (as received)	Composition B	0.36	40	100	Neglig.	AL-S-67-62
" (ground fine)	"	2.62	40	100	Mod.	"
Adhesive, Edge Tak	Propellant T28	0.00	40	90	Neglig.	AL-S-129-64
"	Propellant M17	0.02	40	90	"	"
Adhesive, Formula 3548-74-10pbw, w/catalyst MPDA/LP-235pbw	Composition B	11+	40	100	Excess	AL-S-114-60
Adhesive, MIL-A-388A, Type 2	Composition B4	-0.04	40	90	Neglig.	AL-S-118-62
"	"	-0.05	40	100	"	"
Adhesive, Paisley (polyvinyl acetate water emulsion, dry)	Photoflash powder (Mg/Al/KClO ₄)	-0.19	40	100	"	AL-S-79-61
Adhesive, plastic trim	Propellant M8	1.66	40	90	"	AL-S-41-63
Adhesive-coated fabric tape; Phoenix (Japanese)	RDX	-	-	100	Comp.	DSL, Australia (Method M240/61)
"	TNT	-	-	100	"	"
Adiprene L 100	Black powder A5/fuze powder	-0.27	40	90	Neglig.	AL-S-93-63
"	Composition B	0.42	40	100	"	AL-S-97-63
Adiprene	Composition C-4	0.07	40	100	"	AL-S-66-64
Adiprene L (MOCA-AGE)	HMX-AL-Nylon	1.38	40	100	"	AL-S-106-60
"	HTA-3	-0.06	40	100	"	AL-S-55-61
Adiprene L 100	Lead styphnate	-0.47	40	90	"	AL-S-93-63
"	Red phosphorus, SRP	0.26	40	100	"	AL-S-97-63
Alathon 3120	Igniter material	3.16	40	120	Mod.	AL-S-22-67
Alathon 7040, polyethylene	Propellant M9, Lot 18820	0.08	40	90	Neglig.	AL-S-103-67
Alkyd resin, Plaskon 2201	Lead azide	-0.01	40	100	"	AL-S-183-67
"	RDX, MIL-R-398C	-0.44	40	100	"	"
Alkyd enamel, priming paint, MIL-P-22332 (uncured)	Tritonal (80/20) + 1% calcium silicate	-0.26	40	100	"	AL-S-94-67
"	"	-0.03*	40	100	"	"
"	"	-0.24	40	100	"	"
" (cured)	"	0.73*	40	100	"	"
"	* Plus thinner					
" (uncured)	Tritonal (80/20) + 50% calcium silicate	-0.53	40	100	"	"
"	"	-0.32*	40	100	"	"
" (cured)	"	-0.52	40	100	"	"
"	"	0.06*	40	100	"	"
"	* Plus thinner					
Alkyd enamel, priming paint, MIL-P-22332 (cured) with inert sealing compound, MIL-S-3105	Tritonal (80/20) + 1% calcium silicate	-0.42	40	100	"	AL-S-142-67
Alkyd enamel, priming paint, MIL-P-22332 (cured) with inert sealing compound, MIL-S-3105	Tritonal (80/20) + 10% calcium silicate	-0.29	40	100	"	AL-S-142-67
"	"	-0.37	40	100	"	"
"	TNT + 10% calcium silicate	-0.41	40	100	"	"
Amberlite resin	Black powder A5	0.10	40	100	"	AL-S-104-60
Araldite 6005 (25pbw), hardener (957pbw)	Composition B	1.92	40	100	"	AL-S-114-60
Armstrong A4 Epoxy Resin (uncured)	Potassium chlorate/aluminum (60/40)	-0.13	40	100	"	AL-S-36-59
"	"	-2.36	40	100	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Cellulose acetate, sheet #2, Celanese pilot run	Propellant AHH	-0.35	40	90	Neglig.	AL-S-94-62
Cellulose acetate, sheet #3, Tennessee Eastern Standard Black	"	0.52	40	90	"	"
Cellulose acetate	Propellant NQ	-	1 yr	60	Mod.	WAM/172/01
Cellulose acetate	Propellant HUK	-	1 yr	60	Severe	WAM/172/01
Cellulose acetate, sheet #1, Celanese run	Propellant OGK	0.17	40	90	Neglig.	AL-S-94-62
Cellulose acetate, sheet #2, Celanese pilot run	Propellant OGK	-0.09	40	90	"	AL-S-94-62
Cellulose acetate, sheet #3, Tennessee Eastern Standard Black	Propellant OGK	0.57	40	90	"	"
Cellulose acetate	RDX	-0.20	40	100	"	AL-S-144-65
"	Tritonal (80/20)	0.09	40	100	"	"
Cellulose acetate/fiber glass tape/epoxy	Propellant MDB-7 (Expt 5685)	11+	16	90	Excess	AL-S-75-61
Cellulose acetate/fiber glass tape/epoxy	Propellant MDB-7 (Expt 6585)	-0.60	40	90	Neglig.	"
Cellulose acetate/fiber glass tape/Selectron 5119	Propellant MDB-7 (Expt 5685)	1.58	40	90	"	"
"	Propellant MDB-7 (Expt 6585)	-0.28	40	90	"	"
Cellulose acetate butyrate	Composition B	-0.22	40	100	"	AL-S-144-65
"	Composition H6	0.15	40	100	"	"
"	HTA-3	-0.33	40	100	"	"
"	Octol (75/25)	-0.21	40	100	"	"
"	RDX	-0.16	40	100	"	"
"	Tritonal (80/20)	-0.06	40	100	"	"
"	White phosphorus	-0.04	40	90	"	AL-S-171-64
Cellulose nitrate, base, Type 2 cement (Can A)	Composition B4	0.63	40	100	"	AL-S-62-63
"	"	0.55	40	100	"	"
" (Can B)	"	0.24	40	100	"	"
" (Can C)	"					
Cement, congoleum (Black Mastic)	Propellant ARP	4.12	40	90	Mod.	AL-S-76-61
Chemglaze, white gloss, (Hughson Chemical)	Composition B, Lot HOL-7-1879	0.11	40	100	Neglig.	AL-S-122-66
Chlorinated hydrocarbon - see "hydrocarbon, chlorinated"						
Chlorinated polyether - see "Penton"						
Coating compound, MIL-C-450, type 1 (cured)	Minol-2 (40/40/20)	1.71	40	100	"	AL-S-185-67
"		1.48	40	100	"	"
"	Minol-2 (40/40/20), modified	1.32	40	100	"	AL-S-184-67
Coating MIL-C-450 (cured) plus asphalt hot melt, MIL-C-3301	TNT/AL Meg Aluminum alloy granules EXXO-30 (80/20)	-0.37	40	100	"	AL-S-165-67
		-0.40	40	100	"	"
Coating, asphalt hot melt, MIL-C-3301 plus AL Meg Aluminum granules, EXXO-90-30	TNT, Grade 1	-0.37	40	100	"	"
		-0.29	40	100	"	"
Cobalt naphthenate, accelerator for polyester	RDX, Grade 1A	-	-	100 120 150	Comp. Comp. Not comp.	DSL, Australia Method M240/61
Conap 2510/Conacure AH-19 (50/50), after set-up PIF-21E	Propellant HEN-12	11+	16	90	Excess	AL-S-62-66
Combustible case - see also "nitroglycerine. . ."						
Cycloc, ABS	Propellant M9, Lot 18820	-2.02	40	90	Neglig.	AL-S-103-67

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Durez 26080	Propellant M2 **(Materials in proximity, separated by glass wool)	2.03	40	90	Neglig.*	AL-S-46-67
Dutral - see "ethylene-propylene"						
EC 612 (3M)	Composition B	0.55	40	100	Neglig.	AL-S-115-60
EC - see also "adhesive...."						
Eastman - see "adhesive...."						
Eccobond 56C (cured)	Igniter mix T61	-0.23	40	90	"	AL-S-154-63
Eccobond cement (uncured)	PVA lead azide	0.43	40	120	"	AL-S-108-60
Eccobond cement (cured)	PVA lead azide	0.24	40	120	"	"
Eccobond solder (including catalyst)	Octol (75/25)	3.78	40	100	Mod.	AL-S-52-67
Elastic compound, No. 155.2	Tritonal (80/20)	0.18	40	100	Neglig.	AL-S-44-66
Elastomer XD-38	Propellant M30	3.40	40	90	Mod.	AL-S-19-66
Elastomer 7D-10	"	2.31	40	90	Neglig.	"
Elastomer S-133	Propellant T36	2.03	40	90	"	AL-S-112-63
Elastomer S-133-B	"	2.32	40	90	"	"
Elastomer S-54DE-F2	"	3.41	40	90	Mod.	"
Elastomer S-55-F4	"	4.27	40	90	"	"
Elastomer S-135	"	0.95	40	90	Neglig.	"
Elastomer S-136	"	2.44	40	90	"	"
Elastomer B-8-P	"	1.76	40	90	"	"
Elastomer M75E2 F1.	"	1.99	40	90	"	AL-S-2-63
Elastomer Z110CE2F3	"	5.09	40	90	Excess	"
Elastomer Z118CIF4	"	2.59	40	90	Neglig.	"
Elastomer Z46E	"	11+	40	90	Excess	"
Elastomer 510	"	4.37	40	90	Mod.	"
Elastomer Z103	"	3.03	40	90	"	"
Elastomer S54BIDEF2	"	4.99	40	90	"	"
Elastomer 455-1	"	2.00	40	90	Neglig.	"
Elastomer N117	"	4.48	40	90	Mod.	"
Elastomer I19	"	2.49	40	90	Neglig.	"
Elastomer I51EF	"	1.55	40	90	"	"
Elvax liner (vinyl)	Propellant T36	0.44	40	90	"	AL-S-136-65
Epibond - see "phenoxy"						
Epiphen 825A	HMX/A1/Nylon	1.26	40	100	"	AL-S-61-60
Epiphen ER-825A	Spotting composition 580	0.06	40	100	"	AL-S-93-60
Epiphen 825A, (140pbw); modifier, (12pbw); converter, (16pbw)	Composition B	11+	30	100	Excess	AL-S-114-60
Epocast	Composition C4	11+	16	100	Excess	AL-S-2-65
Epocast N4S-066 Mod 1A	Composition B	11+	16	100	Excess	AL-S-28-65
Epon 31-59 (uncured)	Composition B	3.20	40	100	Mod.	AL-S-68-67
Epon 31-59, Part A/Part B (100:72 by wt.) (anhydrite cured) 7 days @ 75 F)	"	-0.37	40	100	Neglig.	"
Epon 31-59	Cyclotol (70/30)	-0.37	40	100	"	AL-S-26-67
"	HTA-3	0.28	40	100	"	AL-S-39-62
Epon 31-59 (cured)	PETN	-0.52	40	100	"	AL-S-57-65
Epon 31-59 (uncured)	"	-0.33	40	100	"	"
Epon 31-59, Part A (uncured)	"	3.20	40	100	Mod.	"
Epon 31-59, Part B (uncured)	"	2.14	40	100	Neglig.	"
Epon 31-59 (cured)	RDX, Class A	-0.14	40	100	"	"
Epon 31-59 (uncured)	"	0.76	40	100	"	"
Epon 31-59, Part A (uncured)	"	11+	16	100	Excess	"
Epon 31-59, Part B (uncured)	"	0.16	40	100	Neglig.	"
Epon X-81 (100pbw); catalyst Z (22pbw); Bentene (30pbw)	Composition B	11+	22	100	"	AL-S-114-60
Epon 815	Octol (75/25)	11+	40	100	Excess	AL-S-25-65
Epon 820	Composition B	-0.05	40	100	Neglig.	AL-S-72-65
Epon 820/TETA	"	11+	16	100	Excess	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Epon 828/Versamid 125 (50/50)	Black powder A5	0.13	40	100	Neglig.	AL-S-70-66
" (55/45)	"	0.08	40	100	"	"
" (60/40)	"	0.28	40	100	"	"
Epon Resin #828	Casting Powder, ABL 1408 * Includes gas produced by the plastic	<4.41*	40	90	Slight/mod.	USNOS-IH
Epon 828	Composition B	0.06	40	100	Neglig.	AL-S-50-67
Epon 828/Versamid 125 (uncured)	"	- *	1/10	100	*Explo- ded	"
" (cured)	"	9.11	40	100	Excess	"
Epon 828	Cyclotol (75/25)	11+	16	100	Excess	AL-S-68-66
"	Cyclotol w/1% boric acid added	11+	16	100	Excess	"
Epon 828/Versamid 125 5%/5% (uncured)	Emite, Lot X2676 (ball powder)	-0.13	40	100	Neglig.	AL-S-15-67
" (cured)	"	-0.13	40	100	"	"
Epon 828/Cardolite 6885/ Epon Acc. Z/Kaolin	H6	0.63	40	100	"	AL-14-59
Epon 828-125	HTA-3	11+	16	100	Excess	AL-S-39-62
Epon 828-125 HC	"	11+	16	100	Excess	"
Epon 828/EM-550	"	0.37	40	100	Neglig.	AL-S-29-62
Epon 828/Versamid (cured)	"	0.78	40	100	"	AL-S-67-60
Epon 828	Photoflash powder Ca/Al/KClO ₄ (30/20/50)	-0.13	40	100	"	"
"	Photoflash powder, Type III, Class A (40/30/30)	-0.07	40	100	"	"
Epon 828/Versamid 140	Photoflash comp., (EDSP of simulator, gun flash M110)	-0.37	40	100	"	AL-S-15-66
Epon 828/Versamid XD-140 (70/30) (cured)	Photoflash powder, (40/30/30), Type III, Class A	-0.12	40	100	"	AL-S-74-60
" (uncured)	"	-0.05	40	100	"	"
" (cured)	Photoflash powder, (30/20/50) Ca/Al/KClO ₄	-0.03	40	100	"	"
" (uncured)	"	-0.02	40	100	"	"
Epon 828/Versamid 125 (uncured)	Propellant AHH	11+	16	90	Excess	AL-S-4-62
" (cured)	"	11+	16	90	Excess	"
Epon 828	Propellant M5	11+	40	90	Excess	AL-S-117-62
Epon 828/Versamid 125 (50/50) (cured)	Propellant M9	11+	16	90	Excess	AL-S-138-67
Epon 828/Versamid 140 (50/50) (cured 3 hours)	Propellant M9, flake (EDSP-Sig I11, Grd Para Green Star M19A)	11+	16	90	Excess	AL-S-42-66
" (cured 24 hours)	"	11+	16	90	Excess	"
" (uncured)	"	11+	16	90	Excess	"
Epon 828/Versamid 140 (70/30) (cured 24 hours)	"	11+	19	90	Excess	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Epoxy A31	Photoflash comp (EDSP of simulator, gun flash M110)	-0.06	40	100	Neglig.	AL-S-15-66
Epoxy A1177B1 (uncured)	Composition B	-0.11	40	100	"	AL-S-71-65
Epoxy 31B	Propellant T28E1	11+	16	90	Excess	AL-S-87-64
Epoxy 437	Propellant M5	5.35	40	90	Excess	AL-S-117-62
Epoxy 9:53H1494	Propellant T28E1	11+	16	90	Excess	AL-S-87-64
Epoxy 907, adhesive (M.S. Co.)	Lead azide, dextrinated	-0.58	40	90	Neglig.	AL-S-116-64
"	Potassium chlorate, Grade A, Class 2	-0.87	40	90	"	"
"	Tetryl, Grade 1, Class A	0.66	40	90	"	"
Epoxy 907, adhesive	Yellow smoke pellet (EDSP Pellet, Smoke, f/Mine AP, Practice M8A1)	-0.15	40	90	"	AL-S-16-66
Epoxy 907, adhesive (EDSP, Pellet, Smoke, f/Mine AP, Practice M8A1)	Yellow smoke comp	-0.34	40	90	"	"
Epoxy 1210	Propellant T28E1	11+	16	90	Excess	AL-S-87-64
Epoxy H-1863	Propellant M5, flake	-0.54	40	90	Neglig.	AL-S-52-63
Epoxy resin 2215B	Cyclotol (75/25)	11+	16	100	Excess	AL-S-69-66
Epoxy resin, 2500 Black, (Epoxy Products Inc.) plus 44 hardener 1:1	"	11+	16	100	Excess	AL-S-54-66
Epoxy resin 2611	"	11+	16	100	Excess	AL-S-69-66
Epoxy, liquid resin - see "Bakelite ERL 2795"	Fuses	1.33	40	100	Neglig.	AL-S-18-65
Epoxy ERL 2774/Versamid 125 (2.5/1)	Photoflash powder (26/34/40) Al/Mg/potassium perchlorate	0.04	40	100	"	AL-S-18-65
Epoxy ERL 2774	Sodium nitrate, Lot 6729 (Davies Nitrate Co.)	-0.23	40	100	"	AL-S-18-67
Epoxy	Nitrocellulose comp.	-0.11	40	90	"	AL-S-126-60
Epoxy (amine cured) (60/40)	Propellant, cast double base (5% aluminum)	-	48	100	Comp.	DSL, Australia (Explosion test)
Epoxy (amine cured) Epon 946, Parts A & B (Shell Chemical)	"	-	500	80	"	DSL, Australia (Silvered Vessel)
Epoxy (amine cured, 40/60) Epikote 828, (Shell) with hardener Versamid 140 (General Mills)	"	-	500	80	"	DSL, Australia (Silvered Vessel)
Epoxy (anhydride cured) Epon 25-149, Parts A & B, (Shell Chemical)	"	-	48	100	"	DSL, Australia (Explosion Vessel)
Epoxy resin	Propellant HUK	-	500	80	"	DSL, Australia (Silvered Vessel)
Epoxy adhesive 25-149 (cured) (Unfilled 31-59)	Propellant HUK	-	1 yr	60	None/slight	WAM/172/01
Epoxy adhesive (cured)	Combustible case, Standard, Lot WPP-3-3	-0.19	40	90	Neglig.	AL-S-101-67
Epoxy adhesive (uncured)	LFT-1 (PI-F-510) (Gas generator)	0.09	40	90	"	AL-S-142-60
Epoxy adhesive 24-149, (cured) (unfilled 31-59)	"	0.20	40	90	"	"
Epoxy adhesive, Alloco (Alloco Products)	Nitroglycerine-dipped combustible case, 1B7843 F-1	-0.50	40	90	"	AL-S-101-67
Epoxy adhesive, M5 (Miller Stephenson)	Octol (75/25)	11+	16	100	Excess	AL-S-109-64
Epoxy adhesive, 3M, #77	"	11+	16	100	Excess	"
	"	0.21	40	100	Neglig.	AL-S-120-66

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
FM-4005 (Fiberite Corp.)	Octol	-0.04	40	100	Neglig.	AL-S-50-64
FS-4 (Mesa Plastics)	"	-0.43	40	100	Neglig.	"
FS-4	HTA-3	-0.09	40	100	"	AL-S-81-61
Fiberglass/polyester (PD-12-59)	Propellant M5, Lot RAD-38141	0.09	40	90	"	AL-S-153-60
Fiberite	H6	6.23	40	100	Excess	AL-S-19-62
"	RDX	1.41	40	100	Neglig.	"
Fiberite X-1942	Flash powder (50/50 red phosphorus/magnesium)	-0.38	40	100	"	AL-S-40-65
"	Propellant, HiVel #2, Lot 278 (single perf)	11+	16	90	Excess	"
"	Propellant M2 Lot LB-6616-1, flake	11+	40	90	Excess	"
Fiberite 4030	H-6 explosive	1.29	40	100	Neglig.	AL-S-84-62
"	RDX	1.04	40	100	"	"
Fiberite 5430 (epoxy/glass)	HTA-3 composition	6.80	40	100	Excess	AL-S-106-62
"	HTA-3	8.53	40	100	Excess	AL-S-70-61
"	PETN, Class A (unwashed)	0.03	40	100	Neglig.	"
"	RDX	8.01	40	100	Excess	"
Foam flex, sheet #2	Propellant M17	11+	40	100	Excess	59-H1-430
Foam-silastic Q3-0031	H6	-7.90	40	100	Neglig.	59-H1-489
Formica super fast dry contact cement (Cyanamid)	Black powder A5 fuse powder (50/50)	-0.30	40	90	"	AL-S-93-63
Formica super fast dry contact cement (Cyanamid)	Lead styphnate	-0.59	40	90	"	"
Fuller 7003 (epoxy)	Cyclotol (75/25)	11+	16	100	Excess	AL-S-61-66
Furane/CM catalyst/Gypsum (10/2/10)	DATB	NT*	40	100	No test	AL-S-39-63
"	DATB/Lexan (94/6)	NT	16	120	"	"
"	DATB/Teflon (94/6)	NT	16	120	"	"
"	DATB/Viton (94/6)	NT	16	100	"	"
"	DATB/Viton (94/6)	NT	16	120	"	"
"	DATB/Viton (94/6)	NT	16	100	"	"
"	DATB/Viton (94/6)	NT	16	120	"	"
"	RDX/Kel F (90/10)	NT	40	100	"	"
"	RDX/Kel F (90/10)	NT	16	120	"	"
	*Gas generated by control exceeded the capacity of the instrument					
Galvanoplast, conductive paint	Black powder A5	3.62	40	100	Mod.	AL-S-69-62
"	Propellant M6	0.96	40	90	Neglig.	"
"	Propellant M15	11+	21	90	Excess	"
"	Propellant M7	11+	16	90	Excess	"
"	RDX	2.11	40	100	Neglig.	"
"	Tetryl	2.60	40	100	"	"
"	TNT	3.38	40	100	Mod.	"
Gasket, Talos - see "rubber, Potomac"						
Glastimat #1	Composition B	0.01	40	100	Neglig.	AL-S-79-67
"	RDX	-0.21	40	100	"	"
"	Tetryl	0.01	40	100	"	"
Glue, DuPont	Composition B	0.19	40	100	"	AL-S-68-61
G Primer SS 4004	TNT Type 1	-0.17	40	100	"	AL-S-49-67
"	TNT + 1% calcium silicate, tech grade	-0.54	40	100	"	"
"	Tritonal (80/20)	-0.59	40	100	"	"
" (uncured)	Tritonal (80/20) + 1% calcium silicate, tech grade	-0.83	40	100	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Isochemrez #460 w/hardener #63 and catalyst #215X (cured)	First fire composition PA-PD-594, Type 1	0.15	40	90	Neglig.	AL-S-52-62
Isochemrez #460 w/hardener #50 (uncured)	Illuminant comp.; Magnesium, sodium nitrate, binder (63/33/4)	NT	40	90	Tubes broke on cooling	"
" (cured)	"	-0.28	40	90	Neglig.	"
Isochemrez #460 w/hardener #63 and catalyst 215X (uncured)	"	NT	40	90	Tubes broke on cooling	"
" (cured)	"	-0.16	40	90	Neglig.	"
Isochemrez #460 w/hardener #50 (uncured)	Propellant M9, Lot HEP-63006	11+	16	90	Excess	"
" (cured)	"	11+	16	90	Excess	"
Isochemrez #460 w/hardener #63 and catalyst 215X (uncured)	"	11+	40	90	Excess	"
" (cured)	"	-1.88	40	90	Neglig.	"
Kimpak, Sample #190 Type K-51	Propellant M10	-0.43	40	90	Neglig.	AL-S-79-62
Laminac, 4116 and 4134	Black powder A5	0.36	40	100	"	AL-S-116-61
Laminac	Composition A5	-0.42	40	100	"	AL-S-78-66
"	Composition B	-0.15	40	100	"	AL-S-72-65
Laminac 4116	"	-0.13	40	100	"	AL-S-26-59
Laminac/Lupersol	"	-0.16	40	100	"	AL-S-72-65
Laminac 4116	HBX-6	0.68	40	100	"	AL-S-26-59
Laminac 4116, coarse (cured)	HTA-3 composition	-0.23	40	100	"	AL-S-53-63
Laminac 4116, fine (cured)	"	-0.18	40	100	"	"
Laminac 4116 and 4134 (50/50)	Lead azide	1.88	40	90	"	AL-S-64-63
Laminac	Photoflash powder (Daisy) $KClO_4/Al$ (60/40)	-0.25	40	100	"	AL-S-4-59
Laminac, Expt 126-4	Propellant M5, flake	-0.10	40	90	"	AL-S-96-62
Laminac, Expt 126-4/ Laminac 4173 (25/75)	"	1.03	40	90	"	"
Lastomer coating C-717	Tritonal (80/20)	1.93	40	100	"	AL-S-49-66
Lexan GE141	Black powder A5	-0.45	40	120	"	AL-S-27-66
"	Delay composition	-0.21	40	120	"	"
"	First fire composition	-0.21	40	120	"	"
Lexan	HTA-3	-0.16	40	100	"	AL-S-66-67
Lexan GE 141	Igniter composition	-0.46	40	120	"	AL-S-27-66
"	Illuminant composition	-0.49	40	120	"	"
Lexan	Lead azide, RD 1333	-0.27	40	100	"	AL-S-22-65
"	Propellant M8	-0.07	40	90	"	AL-S-106-66
"	Propellant M9, Lot 18820	-0.94	40	90	"	AL-S-103-67
"	Tetryl	-0.28	40	100	"	AL-S-16-63
"	"	-0.28	40	100	"	AL-S-22-65
Lexan GE 141	White star pellets, uncoated (ctg of 40 mm HE, M406)	-0.21	40	120	"	AL-S-27-66
Loctite AV-10-10	Benite	11+	16	100	Excess	AL-S-22-66
"	Benite powder (strands)	11+	16	100	Excess	AL-S-31-66
"	Benite powder (strands)*	11+	40	100	Excess	"

* The strands of benite powder were separated from the Loctite by a piece of fiberglass approximately 2-1/2 inches long.

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
MCS-33-1	Propellant M2	-0.15	40	90	Neglig.	AL-S-9-1959
MCS-33-2	"	-0.08	40	90	"	"
MCS-33-3	"	-0.10	40	90	"	"
MCS-33-1	Propellant M8	1.85	40	90	"	"
MCS-33-2	"	0.69	40	90	"	"
MCS-33-3	"	0.68	40	90	"	"
MCS-33-1	Tetryl	-0.14	40	90	"	"
MCS-33-2	"	-0.14	40	90	"	"
MCS-33-3	"	-0.14	40	90	"	"
McConnaplast 38	HMX	-0.33	40	100	"	AL-S-90-65
"	RDX	-0.19	40	100	"	"
Meta Seal - see "polyester"						
Molycoat	Composition B	0.26	40	100	"	AL-S-86-60
"	RDX	0.09	40	100	"	"
Molyube No. 16 (Belray, Inc.)	Lead azide	-0.20	40	100	"	AL-S-96-66
"	Lead styphnate, basic	-0.29	40	100	"	"
"	Tetryl, KNK 7072	0.07	40	100	"	"
Mortite #89 (sealant)	Tritonal (80/20)	0.54	40	100	"	AL-S-49-66
Mortite #5001 (sealant)	"	0.24a	40	100	"	"
Mortite #5700-57 (sealant)	"	0.08	40	100	"	"
Mylar film (Schjelbond 300)	Composition B	0.01	40	100	Neglig.	AL-S-74-63
"	Cyclotol (75/25)	-0.13	40	100	"	"
"	Lead azide, RD 1333	-0.31	40	100	"	"
Mylar	Octol (75/25)	-0.20	40	100	"	AL-S-120-66
Mylar film (Schjelbond 300)	PBX, Type A	-0.15	40	100	"	AL-S-74-63
Mylar film (Schjelbond 300)	Primer mix, NOL 130	-1.10	40	100	"	AL-S-74-63
Mylar film	Propellant, ball powder	-0.29	40	90	"	AL-S-34-61
"	Propellant HEX-12	-0.38	40	90	"	AL-S-34-61
"	Propellant LFT-1	-0.08	40	90	"	"
"	Propellant MDB-7	-0.08	40	90	"	"
"	Propellant M9, Lot 18820	0.78	40	90	"	AL-S-103-67
"	Propellant T16	-1.03	40	90	"	AL-S-34-61
Mylar film (Schjelbond 300)	RDX	-0.18	40	100	"	AL-S-74-63
Mylar film	RDX composition	-0.27	40	100	"	AL-S-42-61
Mylar film with adhesive EC-826 (3M)	Propellant, ball powder	-0.21	40	90	"	AL-S-34-61
"	Propellant HEX-12	-0.53	40	90	"	"
"	Propellant LFT-1	-0.01	40	90	"	"
"	Propellant M9	-2.62	40	90	"	"
"	Propellant, MDB-7	-0.21	40	90	"	"
"	Propellant T16	-0.73	40	90	"	"
Mystic - see "tape...."						
Narmco 3170/7133	HTA-3 Composition	11+	16	100	Excess	AL-S-135-63
Neoprene EC 870	Propellant M7	3.81	40	90	Mod.	AL-S-122-63
"	Propellant M7, paint	2.63	40	90	Neglig.	"
Neoprene, Atlantic Brand	Propellant M7	11+	24	90	Excess	"
"	Propellant M7, paint	5.99	40	90	Excess	"
Neoprene	Tetrytol	2.92	40	100	Neglig.	AL-S-37-63
Neoprene gasket, w/brass contact	Propellant NH, vapors	-	3-7 mo	60	Fairly long service life	ERDE 9/M/53
"	Propellant NQ, vapors	-	3-7 mo	60	Very poor service life	"
Neoprene rubber	AstroMite G Lot 0014 (liquid explosive)	2.86	40	100	Slight	AL-S-19-67
Neoprene rubber cements (Neoseal Nos 6 & 7; Dunlop Rubber (Aust))	RDX, grade 1A	-	-	100	Comp.	DSL, Australia (Method M240/61)
Neoseal - see "neoprene rubber cements"						
Nitrocellulose tow	Ignition mix, AXP-90933	-0.23	40	100	Neglig.	AL-S-82-60
Nitrorubber	HMX	0.04	40	90	"	AL-S-152-65

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Permagum #570.41	Tritonal (80/20)	0.14	40	100	Neglig.	AL-S-44-66
Petrin acrylate, monomer blend #13	RDX, Lot HOL-4-57	-1.14	40	100	"	AL-S-124-60
"	TNT	-0.27	40	100	"	"
PF resins	Plastic explosive	-	1 yr	60	None/slight	WAM/172/01
"	TNT	-	1 yr	60	"	WAM/172/01
Phenolic - see also "epoxy....", "Durez"						
Phenolic/glass molding compound - see "FM-4005"						
Phenolic molding compound - see "RX-431", "RX-475", "RX-525", "RX-600"						
Phenolic, CF1	H6	2.04	40	100	Neglig.	AL-S-79-61
Phenolic	HTA 3	0.57	40	100	"	AL-S-149-60
Phenol-formaldehyde (microballoons, Union Carbide)	Nitroglycerine	-	-	-	Comp.	DSL, Australia (Heat Test)
"	Nitrocellulose	-	-	-	"	"
Phenolic	PETN	0.29	40	100	Neglig.	AL-S-149-60
Phenol-formaldehyde case material	Photoflash composition (one week @ 100 C)	-0.25	40	100	"	AL-S-100-64
	(one month @ 100 C)	-0.11	40	100	"	"
		-0.14	40	100	"	"
Phenolic adhesive; Redux 775 liquid (CIBA) (ARL) Ltd.	Propellant, cast double base (5% aluminum)	-	500	80	Comp.	DSL, Australia (Silvered Vessel)
Phenolic resin, Plenco #5246	Propellant M2	1.39	40	90	Neglig.	AL-S-77-66
"	Propellant M2*	1.23	40	90	"	"
* The propellant was separated from the phenolic resin by fiberglass						
Phenolic	RDX	3.34	40	100	Mod.	AL-S-149-60
Phenolic, CF1	"	0.58	40	100	Neglig.	AL-S-79-61
Phenoxy PAHJ (Epibond 100A)	Cyclotol (75/25)	11+	16	100	Excess	"
Phenoxy resin	CE	-	1 yr	60	None/slight	WAM/172/01
Phenoxy resin	Propellant NQ	-	1 yr	60	"	WAM/172/01
Phenoxy resin	TNT	-	1 yr	60	Slight/mod.	WAM/172/01
Phoenix cloth tape - see "adhesive-coated fabric"						
Plaskon 8200, nylon 6	Propellant M9, Lot 18820	2.10	40	90	Neglig.	AL-S-103-67
Plastisol rubber	Composition B	1.90	40	100	"	AL-S-67-63
Plastisol, RC, VP8-1	HMX/Exon/DOS (95/4.4/.6)	-0.44	40	100	"	AL-3-59
		-0.17	40	100	"	"
Plastisol rubber	RDX, class A, Type B	0.08	40	100	"	AL-S-67-63
Plastrene 317 - see "polyester"						
Plenco, 2.75	Flash powder (50/50 red phosphorus/magnesium)	-0.52	40	100	"	AL-S-40-65
"	Propellant, HiVel #2, Lot 278 (single perf)	5.57	40	90	Excess	"
"	Propellant M2 Lot IB-6616-1 (single perf grain)	0.94	40	90	Neglig.	"
Pliobond 20	Cyclotol (70/30) Lot 51-9	5.46	40	100	Excess	AL-S-76-67
Pliobond 30	"	5.41	40	100	Excess	"
Pliobond 30 (Goodyear)	Octol (70/30)	3.22	40	100	Mod.	AL-S-92-65
"	Octol (75/25)	2.79	40	100	Neglig.	"
Pliobond 20	Propellant M26 Lot RAD-SR-5-2-62	3.48	40	90	Mod.	AL-S-14-67
Pliobond 30	"	11+	40	90	Excess	"
Pliobond 20	Propellant M30, Lot PA-63558	4.89	40	90	Mod.	"
Pliobond 30	"	5.49	40	90	Excess	"
Pliobond 30 (cured)	Propellant T16	11+	16	90	Excess	AL-S-125-63
Pliobond 30 (uncured)	Propellant T16	0.77	40	50	n/a	"
Pliobond	Propellant T36	11+	16	90	Excess	AL-S-116-62
Pliobond/polyurethane	Propellant T36	11+	24	90	Excess	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Polyester, (3M), #850 (pressure sensitive tape)	Propellant M5	-0.04	40	90	Neglig.	AL-S-150-60
Polyester resin #1 (Laminac 4173/Laminac EPX-12614 (75/25), w/0.87 polyester blue color paste)	Propellant M5, flake	-1.58	40	90	"	AL-S-19-63
Polyester resin #2 (Laminac 4173/Laminac EPX-126-4 (75/25) w/0.57 polyester blue color paste added)	"	-0.72	40	90	"	"
Polyester solid foam #7	Propellant M17	11+*	16	90	Excess	AL-S-76-62
Polyester solid foam #5	"	11+*	19	90	Excess	"
* Note that high gassing of foam sample contributed unduly to "excessive" reaction						
Polyester film tape, Scotch brand No. 850	Propellant M30, Lot PA-63558	-0.28	40	90	Neglig.	AL-S-9-67
Polyester/glass laminate	Propellant NH	-	1 yr	60	None/ slight	WAM/172/01
Polyester/glass laminate	Propellant NQ	-	1 yr	60	Slight/ mod.	WAM/172/01
Polyester alternative sealing compound, Glidpol 1024, (cured)	Propellant T16	0.37	40	90	Neglig.	ERS-HE-125-60
" (uncured)	"	3.52	40	90	Mod.	"
Polyester solid foam #5	Propellant T36, Lot RAD-36-61	11+*	24	90	Excess	AL-S-76-62
Polyester solid foam #7	"	11+*	16	90	Excess	"
* Note that high gassing of foam sample contributed unduly to "excessive reaction"						
Polyester resin	RDX, Class A, Type B	-0.08	40	100	Neglig.	AL-S-103-63
Polyester resin, T-255042, pre-imp.	RDX	-0.44	40	100	"	59-HI-78
Polyester with cobalt naphthenate (0.2 phr) and methyl ethyl ketone peroxide (2.0 phr) - (Crystic 191 MV or Crystic 404S)	RDX, Grade 1A	-	-	100	Comp. when fully cured. Uncured resins not comp.	DSL, Australia (Method M240/61)
"	RDX/TNT	-	-	100	Comp. when fully cured; uncured resins not comp.	"
Polyester resin with cobalt naphthenate, (0.5 phr) and cyclohexanone peroxide paste, (1.0 phr) - (Plastrene 317, Polymer Corporation)	RDX, grade 1A	-	-	100	Comp. cured resin	"
				120	Comp. cured resin	
				150	Not comp. cured resin	
Polyester resins	RDX/TNT	-	1 yr	60	None/ slight	WAM/172/01
Polyester/glass laminates	RDX/TNT	-	1 yr	60	"	WAM/172/01
Polyester	Tetryl	0.40	40	100	Neglig.	AL-S-23-67

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Polypropylene, Pro-Fax (Hercules Powder Co.)	Composition A5	-0.22	40	100	Neglig.	AL-S-92-66
Polypropylene	Composition B	-0.07	40	100	"	AL-S-125-66
Polypropylene, Avisun 840-1446	Delay composition	-0.22	40	100	"	AL-S-27-66
"	First fire composition	-0.18	40	120	"	"
"	Igniter composition	-0.37	40	120	"	"
"	Illuminant Composition	-0.43	40	120	"	"
Polypropylene	Propellant NH	-	1 yr	60	None/slight	WAM/172/01; ERDE 70/M/65
"	Propellant NQ	-	1 yr	60	Slight/mod.	"
"	RDX/TNT	-	1 yr	60	None/slight	"
"	TNT	-	1 yr	60	"	"
Polypropylene, Avisun 840 1446	White star pellets (uncoated)	-0.03	40	120	Neglig.	AL-S-27-66
Polystyrene, expanded - see "Resilo-Pak"						
Polystyrene (vial)	Black powder/magnesium (75/25)	-0.18	40	100	"	AL-S-167-64
Polystyrene; Styron Drab Green D2417, molding powder; CSRC, Dow	CE	-	-	100	Comp.	DSL, Australia (MIL-P-22332)
Polystyrene, modified	Flash powder, red phosphorus/magnesium (50/50)	1.26	40	100	Neglig.	AL-S-40-65
Polystyrene (vial)	Photoflash powder, PFP 579 (Dwg CPX 89483)	-0.26	40	100	"	AL-S-167-64
Polystyrene (foam)	Propellant, DDP, base grain	0.12	40	90	"	AL-S-94-65
Polystyrene No. 1, U.S. Mineral Prod. Co., PIF-31K	Propellant HEN-13	-0.40	40	90	"	AL-S-62-66
Polystyrene No. 2, U.S. Mineral Prod. Co., PIF-32I	"	0.33	40	90	"	"
Polystyrene No. 1	Propellant M5	-0.97	40	90	"	AL-S-117-62
Polystyrene No. 2	"	0.72	40	90	"	"
Polystyrene No. 3	"	1.17	40	90	"	"
Polystyrene	Propellant HUK	-	1 yr	60	None/slight	WAM/172/01; ERDE 70/M/65
"	Propellant NH	-	1 yr	60	"	"
"	Propellant NQ	-	1 yr	60	"	"
Polystyrene, toughened	Propellant HUK	-	1 yr	60	Slight/mod.	"
"	Propellant NQ	-	1 yr	60	"	"
Polystyrene	RDX/TNT	-	1 yr	60	None/slight	"
"	TNT	-	1 yr	60	"	"
Polystyrene, toughened	RDX/TNT	-	1 yr	60	"	"
"	TNT	-	1 yr	60	Slight/mod.	"
Polysulfide rubber composition (Thiokol, LPZ 313)	Composition B	2.33	40	100	Neglig.	AL-S-64-67
Polysulfide rubber sealant	Tetryl booster pellet (not contaminated, 60 & 61)	1.97	40	100	"	AL-S-61-63
"	Tetryl booster pellet (not contaminated, 20 & 21)	1.92	40	100	"	"
Polysulphone	CE	-	1 yr	60	None/slight	WAM/172/01

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Polyurethane D	Propellant T36	6.39	40	90	Excess	AL-S-23-62
Polyurethane C	"	11+	40	90	Excess	AL-S-21-62
Polyurethane B	"	11+	40	90	Excess	"
Polyurethane B	"	11+	40	90	Excess	"
Polyurethane A	"	0.85	40	90	Neglig.	"
Polyurethane EP 626/628 (liquid)	Tetryl, KNK 7-063	11+	40	100	*Excess	AL-S-60-67
Polyurethane varnish	RDX	<0.88	40	100	Neglig.	AL-S-170-67
Polyvinyl acetate, Metex XZ-2	Lead azide, RD 1333	-0.02	40	100	Neglig.	AL-S-98-65
"	TNT	11+	16	100	Excess	AL-S-98-65
PVC - Polyvinyl chloride						
PVC (rigid)	Propellant NH	-	1 yr	60	None/slight	WAM/172/01; ERDE 70/M/65
"	Propellant NQ	-	1 yr	60	"	"
PVC (plasticized)	Propellant HUK	-	1 yr	60	Mod.	WAM/172/01
Polyvinyl chloride, tubing, plasticized, Nylex Corp.	RDX, Grade 1A	-	1	100	Comp.	DSL, Australia (Method M240/61)
PVC (rigid)	RDX/TNT	-	1 yr	60	None/slight	WAM/172/01; ERDE 70/M/65
"	TNT	-	1 yr	60	"	"
PVC (plasticized)	RDX/TNT	-	1 yr	60	Mod.	"
"	TNT	-	1 yr	60	"	"
Polyvinyl chloride, plasticized, Scotch Brand No. 471 (3M Company)	TNT	-	-	120	Comp.	DSL, Australia (Method M240/61)
PVDC - Polyvinylidene chloride						
Polyvinylidene chloride (Saran)	Plastic explosive (PE)	-	1 yr	60	Slight/mod.	WAM/172/01
Polyvinylidene chloride	Propellant HUK	-	1 yr	60	None/slight	WAM/172/01
Potting compound - see "Bakelite ERL 2795" and "Selectron"						
Prestite - see "primer...."						
Primer, MIL-P-22332 (cured) plus Prestite (50/50)	Tritonal (80/20)/1% calcium silicate	0.13	40	100	Neglig.	AL-S-158-67
"	"	0.11	40	100	"	"
Primer, MIL-P-22332 (cured) plus Prestite (50/50) plus trichlorethylene	"	0.64	40	100	"	"
Primer, Dow Corning A4014	Composition 9404	0.60	40	100	"	59-HI-487
Pumpable caulk C-768	Tritonal (80/20)	-0.09	40	100	"	AL-S-49-66
PV-918 (extra baked)	Composition B4	3.09	40	120	Mod.	AL-S-18-64
Quaker Koat (bituminous) (Quaker State Oil Ref.)	Tritonal (80/20), PA-PD-126	0.59	40	100	Neglig.	AL-S-27-67
"	"	0.74	48	100	"	"
"	TNT, Type 1, MIL-T-248A	0.99	40	100	"	"
"	"	1.36	48	100	"	"
Raybestos R1	Propellant M2	1.96	40	90	Neglig.	AL-S-128-66
Raybestos R-86020 (adhesive) (cured 2 hrs @ 325 F)	Composition B	0.00	40	100	"	AL-S-100-62
"	"	0.31	40	100	"	"
(cured 2 hrs @ 325 F; stored 6 mo @ 50 C)	"					
"	Octol (75/25)	0.03	40	100	"	"
(cured 2 hrs @ 325 F)	"					
"	"	-0.19	40	100	"	"
(cured 2 hrs @ 325 F; stored 6 mo @ 50 C)	"					
Rayon, Elk #140 (9-22-63)	Propellant M6 (OKLA 32410)	0.11	40	100	"	AL-S-52-64
		-0.89	40	90	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
RTV 732, Lot 815199, White (cured)	Propellant HES-8028.3	-0.14	40	90	Neglig.	AL-S-62-67
RTV, Dow Corning Q95-015 (cured)	Propellant M7	11+	40	90	Excess	AL-S-99-65
RTV, Dow Corning Q95-015 (uncured)	"	2.97	40	90	Mod.	"
RTV 102 (G. E.), adhesive; grey paint resisting enamel	Propellant M7 (RAD-50615-55)	-0.73	40	100	Neglig.	AL-S-136-63
RTV 732 (uncured)	Propellant M7	-0.06	40	90	"	AL-S-17-64
RTV 732 (Dow Corning), adhesive; grey enamel resisting enamel	Propellant M7 (RAD-50615-55)	-0.63	40	90	"	AL-S-136-63
RTV 112 (cured)	Propellant M9	-0.76	40	90	"	AL-S-32-66
RTV 112 (uncured)	"	0.18	40	90	"	"
RTV 732 (cured)	Propellant M9, flake Lot 64444	-	-	-	Neglig.*	AL-S-191-67
RTV 732 (uncured)	"	-	-	-	Neglig.*	"
* On basis of the 120°C Heat Test						
RTV 102, white (cured)	Propellant M9	-0.31	40	90	Neglig.	AL-S-196-67
RTV 102, white (uncured)	"	11+	40	90	Excess	"
RTV 102 (cured)	Propellant T16	-0.33	40	90	Neglig.	AL-S-125-63
RTV 731 (cured)	"	-0.17	40	90	"	"
RTV 732 (cured)	Propellant T28E1	-0.23	40	90	"	AL-S-124-65
RTV 732 (uncured)	"	0.72	40	90	"	"
RTV 102 (GE)	RDX	-0.13	40	100	"	AL-S-106-63
RTV 732	RDX, Class A, Type B	0.04	40	100	"	AL-S-83-63
RTV silicone rubber	RDX	0.40	40	100	"	AL-S-144-65
RTV 102 (uncured)	Tetryl, Lot KNK 7-063	-0.01	40	100	"	AL-S-89-67
RTV 102 (cured)	"	-0.09	40	100	"	"
RTV 732, vulcanizing rubber (uncured)	Tetryl booster pellet	0.12	40	RT	"	AL-S-67-64
"	"	-0.08	40	(160 F)	"	"
RTV 7 (cured)	TNT type 1	-0.69	40	100	"	AL-S-49-67
RTV 7 (uncured)	"	0.04	40	100	"	"
RTV 7/Nucure 28 (uncured)	"	-1.43	40	100	"	"
		-1.47	40	100	"	"
RTV 7/Nucure 28 (uncured)	TNT type 1 + 1% calcium silicate, tech grade	-1.49	40	100	"	"
RTV 7/Nucure 28/ RTV 11/Nucure 28 (uncured)	TNT type 1	-1.61	40	100	"	"
		-1.57	40	100	"	"
RTV 7/Nucure 28 - RTV 11/Nucure 28 (uncured)	TNT Type 1 + 1% calcium silicate, tech grade	-1.48	40	100	"	"
RTV 11 (cured)	TNT type 1	-0.13	40	100	"	"
RTV 11 (uncured)	TNT type 1	0.40	40	100	"	"
RTV 11/Nucure 28 (uncured)	TNT type 1	-0.42	40	100	"	"
		-0.43	40	100	"	"
"	TNT type 1 + calcium silicate, 1%, tech grade	-0.30	40	100	"	"
RTV 616 (cured)	TNT	-0.54	40	100	"	AL-S-143-67
RTV 634 (cured)	"	-0.25	40	100	"	"
RTV 616 (cured) in the presence of Coating Compound Type 1 (1 to 1)	"	-0.17	40	100	"	"
RTV 634 (cured) in the presence of Coating Compound Type 1 (1 to 1)	"	-0.11	40	100	"	"
RTV silicone rubber	Tritonal (80/20)	0.09	40	100	"	AL-S-144-65
RTV 7 (cured)	"	-0.62	40	100	"	AL-S-49-67
RTV 7 (uncured)	"	-0.29	40	100	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Rubber plugs, RB24, for fuzes	PETN	-	28 mo	120	Comp.	DSL, Australia (accel compat)
Rubber, neoprene	Plastic explosive (PE)	-	1 yr	60	None/ slight	WAM/172/01
Rubber, nitrile	"	1	1 yr	60	"	"
Rubber, silicone	Propellant AHH	-0.17	40	90	"	AL-S-44-65
		0.48	40	100	"	"
Rubber, Connover S613-6	Propellant HES-8028.3	-0.07	40	90	"	AL-S-62-67
Rubber, butyl	Propellant HUK	-	1 yr	60	Slight/ mod.	WAM/172/01
Rubber, neoprene	"	-	1 yr	60	Mod./ severe	"
Rubber, nitrile	"	-	1 yr	60	Severe	"
Rubber, natural	"	-	1 yr	60	Mod/ severe	"
Rubber base polymer; Para Seal	Propellant M5	3.15	40	90	Mod.	AL-S-87-64
Rubber base liner	Propellant M6	11+	40	90	Excess	AL-S-154-64
Rubber base polymer; Para Seal	"	-0.93	40	90	Neglig.	AL-S-87-64
Rubber base enamel, chlorinated; Shervin Williams B69A14	Propellant M7	-0.40	40	90	"	AL-S-122-63
Rubber compound XC 45	Propellant M8	1.71	40	90	"	AL-S-73-66
Rubber compound XC 63	"	1.96	40	90	"	"
Rubber compound XC 45	Propellant M9	0.86	40	90	"	AL-S-73-66
Rubber compound XC 63	"	1.08	40	90	"	"
Rubber O-ring	"	2.02	40	90	"	AL-S-2-62
Rubber base polymer; Para Seal	Propellant M17	11+	17	90	Excess	AL-S-87-64
Rubber, butyl	Propellant NH	-	1 yr	60	Slight/ mod.	WAM/172/01
Rubber, neoprene	"	-	1 yr	60	Mod./ severe	"
Rubber, nitrile	"	-	1 yr	60	Severe	"
Rubber, natural	"	-	1 yr	60	Mod.	"
Rubber, natural, gasket w/brass contact	Propellant HN, vapors	-	3-7 mo	60	Fairly long service life	ERDE 9/M/52
Rubber, butyl	Propellant NQ	-	1 yr	60	Slight/ mod.	WAM/172/01
Rubber, fluorosilicone	"	-	1 yr	60	Mod./ severe	"
Rubber, natural	"	-	1 yr	60	"	"
Rubber, nitrile	"	-	1 yr	60	Severe	"
Rubber, silicone	"	-	1 yr	60	Mod.	"
Rubber, base liner	Propellant T36	11+	16	90	Excess	AL-S-154-64
Rubber, chlorobutyl	"	0.99	40	90	Neglig.	AL-S-99-62
Rubber, Burke	"	3.99	40	90	Mod.	AL-S-99-62
"	"	3.70	40	90	"	"
"	"	1.80	40	70	Neglig.	"
Rubber, Burke (American obturators)	"	7.50	40	90	Excess	AL-S-93-62
Rubber, Burke (Obturators)	"	3.11	40	70	Mod.	AL-S-98-62
Rubber, Burke, M981, L-4	"	1.38	40	90	Neglig.	AL-S-2-63
Rubber, Burke, M981, R-1	"	4.49	40	90	Mod.	"
Rubber, Burke, M981, R-7	"	2.70	40	90	Neglig.	"
Rubber, Burke, M981, R-8	"	1.95	40	90	"	"
Rubber, Burke, M981, R-9	"	1.41	40	90	"	"
Rubber, Burke, X4438	"	1.60	40	90	"	"
Rubber, butyl	"	0.60	40	90	"	AL-S-99-62
Rubber, butyl, brominated	"	2.11	40	90	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Scott 1/8" Premium Beige Sheet, PIF-20D	Propellant HEN-12	3.89	40	90	Mod.	AL-S-62-66
Sealant #400	Detonating cord	0.04	40	100	Neglig.	AL-S-64-60
Sealant, NS Truck and Bus Pellet	TNT	0.04	40	100	"	59-H1-615
Sealer, EC 1279	Tritonal (80/20)	0.36	40	100	"	AL-S-45-66
Selectron (Mix 5003/5214)	Black powder A5	0.31	40	100	"	AL-S-116-61
Selectron	Boron/potassium nitrate (pellets, type 2R)	-0.59	40	90	"	AL-S-132-63
Selectron	HEX-12	0.82	40	90	"	"
Selectron	LFT-3	-0.04	40	90	"	"
Separan NP10, Lot 258 (polyacrylamides)	HMX	-0.18	40	100	"	AL-S-22-59
Separan NP10, Lot 258/ NaCl (10/1)	"	-0.08	40	100	"	"
Separan NP10, Lot 258/ KCl(SO ₄) ₂ (10/1)	"	0.02	40	100	"	"
Separan NP10, Lot 326	"	-1.27	40	100	"	"
Separan NP20, Lot 8	"	-0.42	40	100	"	"
Separan NP20, Lot 8/NaCl (10/1)	"	-0.01	40	100	"	"
Separan NP20, Lot 8/ KCl(SO ₄) ₂ (10/1)	"	0.02	40	100	"	"
Separan NP20, Lot 14	"	-0.09	40	100	"	"
Separan NP10, Lot 258	RDX	-0.27	40	100	"	"
Separan NP10, Lot 258/ KCl(SO ₄) ₂ (10/1)	"	-0.10	40	100	"	"
Separan NP10, Lot 258/ NaCl (10/1)	"	0.11	40	100	"	"
Separan NP10, Lot 326	"	5.36	40	100	Excess	AL-S-22-59
Separan NP20, Lot 8	"	-0.22	40	100	Neglig.	"
Separan NP20, Lot 8/ KCl(SO ₄) ₂ (10/1)	"	0.14	40	100	"	"
Separan NP20, Lot 8/ NaCl (10/1)	"	-0.02	40	100	"	"
Separan NP20, Lot 14	"	-0.22	40	100	"	"
Separan NP10, Lot 258	TNT	0.41	40	100	"	"
Separan NP10, Lot 258/ KCl(SO ₄) ₂ (10/1)	"	0.28	40	100	"	"
Separan NP10, Lot 258/ NaCl (10/1)	"	0.32	40	100	"	"
Separan NP10, Lot 326	"	6.22	40	100	Excess	AL-S-22-59
Separan NP20, Lot 8	TNT	0.01	40	100	Neglig.	AL-S-22-59
Separan NP20, Lot 8/ KCl(SO ₄) ₂ (10/1)	"	0.13	40	100	"	"
Separan NP20, Lot 8/ NaCl (10/1)	"	0.25	40	100	"	"
Separan NP20, Lot 14	"	0.07	40	100	"	"
Silastic - see "rubber"						
Silastic foam - see "foam-silastic"						
Silastic RTV 731 (uncured) (Dow Corning)	Black powder A5	0.14	40	100	"	AL-S-102-64
Silastic RTV 732 (uncured) (Dow Corning)	"	0.75	40	100	"	"
Silastic Gum #1	Composition B	0.15	40	100	"	AL-S-74-63
Silastic Gum #2, Lot 6861	"	-0.10	40	100	"	"
Silastic Gum #3, Lot 813	"	0.21	40	100	"	"
Silastic Gum #1	Cyclotol (75/25)	0.40	40	100	"	"
Silastic Gum #2, Lot 6861	"	-0.16	40	100	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Silicone rubber, vulcanized (Dow Corning) Silastic Grade 6508 (Pigmented with chromium trioxide)	RDX, Grade 1A	-	-	100	Comp.	DSL, Australia Method M240/61
Silicone sealant #Q 95-011 (uncured) (Dow Corning)	RDX	-0.17	40	100	Neglig.	AL-S-102-64
Silicone construction sealant #SE-1201, (uncured) (GE)	"	-0.08	40	100	"	"
Silicone grease, GP, soft (Dow Corning Corp)	RDX/TNT	-	-	100	Comp.	DSL, Australia (MIL-P-22332)
Silicone sealant #Q 95-011 (uncured) (Dow Corning)	Tetryl	5.85	40	100	Excess	AL-S-102-64
Silicone construction sealant #SE-1201 (uncured) (GE)	"	-0.64	40	100	Neglig.	"
Silicone sealant #Q 95-011 (uncured) (Dow Corning)	TNT	0.44	40	100	"	"
Silicone construction sealant #SE-1201 (uncured) (GE)	"	-0.64	40	100	"	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	0.25	40	100	"	AL-S-73-67
Silicone compound (GE), TBS-757B (curing agent)	Tritonal (80/20) + 1% calcium silicate	11+	1/3	100	Excess	"
Silicone compound (GE), TBS-757A	"	-0.58	40	100	Neglig.	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	-0.13	40	100	"	"
Silicone compound (GE), TBS-757A	"	-0.27	40	100	"	"
Silicone compound (GE), TBS-757A	Tritonal (80/20) + 50% calcium silicate	-0.35	40	100	"	"
Silicone compound (GE), TBS-757B (curing agent)	"	-0.23	40	100	"	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	11+	1/3	100	"	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	0.51	40	100	"	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	0.41	40	100	"	"
Silicone compound (GE), TBS-757A + TBS-757B (cured) + bituminous coating compound	Tritonal (80/20) + 10% calcium silicate	-0.24	40	100	"	"
Silicone compound (GE), TBS-757B	"	11+	1/4	100	Excess	"
Silicone compound (GE), TBS-757A	"	-0.16	40	100	Neglig.	"
Silicone compound (GE), TBS-757A + TBS-757B (cured)	"	-0.35	40	100	"	"
Silicone, Thermofax	White phosphorus	-0.08	40	90	"	AL-S-117-66
Solithane - see "polyurethane"						
Sponge, epon cell (plastic)	White phosphorus	0.01	40	90	"	AL-S-171-64
Stearyl liner	Propellant T36	0.08	40	90	"	AL-S-141-65
Sti'well Syrup - see "urea-formaldehyde"						
Styrene	Propellant T36	-0.14	40	90	"	AL-S-134-63
"	"	-0.99	40	100	"	"
Styrene/acrylonitrile	RDX/TNT	-	1 yr	60	Mod.	WAM/172/01
"	TNT	-	1 yr	60	"	"
Styrene-acrylonitrile, reinforced - see "Acrylafil"						
Stycast 2541	Octol (75/25)	11+	16	100	Excess	AL-S-46-65
Styron - see "polystyrene"						
Styron, Class 1, 322-27-71, YA-704-36	Composition C4	-0.25	40	100	Neglig.	AL-S-92-67
Styron, Class 1, 333-27, NAT-71, YA-704-32	"	-0.24	40	100	"	"

Plastic	Explosive	Gas (ml)	Hrs	Temp (°C)	Rating	Report No.
Teflon	Propellant, double-base, cast charge 5667	-0.06	40	90	Neglig.	AL-S-43-63
Teflon film	RDX	-0.03	40	100	"	AL-S-151-60
Telemar (fluorocarbon)	Composition B	-	40	100	"	AL-S-109-65
TPX - methyl pentene						
TPX	CE	-	1 yr	60	None/slight	WAM/172/01
"	Propellant NQ	-	1 yr	60	"	"
"	TNT	-	1 yr	60	"	"
Tra-Bond BB-2129 (Tra-Con, Inc.)	RDX, Type II	4.86	40	100	Mod.	AL-S-59-66
Trenco M-5592 (Part A-10 pbw, Part B-20 pbw)	Composition B	11+	16	100	Excess	AL-S-114-60
Tubing, plastic, Flexible Z202 (Hughson Chemical Co.)	Composition B, Lot HOL-7-1879	0.33	40	100	Neglig.	AL-S-122-66
Tufflex	Propellant M10	-0.30	40	90	"	AL-S-79-62
Tyton Adhesives - see "urea formaldehyde"						
Urea formaldehyde, paper impregnated with (Stilwell Syrup, Tyton Adhesives)	RDX (RDX/TNT)	-	-	100	Comp.	DSL, Australia (Method M240/61)
"	Tetryl	-	-	100	"	"
"	TNT (RDX/TNT)	-	-	100	"	"
Urethane (room temperature cured)	Composition B	-0.17	40	100	Neglig.	AL-S-144-65
"	R6 composition	2.32	40	100	"	"
"	HTA-3	-0.23	40	100	"	"
"	Octol (75/25)	-0.16	40	100	"	"
"	RDX	-0.17	40	100	"	"
"	Tritonal (80/20)	0.04	40	100	"	"
Urethane foam, low ext. ether 2AP, 63PPIL8-31-2B	Propellant HEN-12	5.26	40	90	Excess	AL-S-57-66
Urethane foam, polyether sheet 2 apped	"	5.45	40	90	Excess	"
Urethane foam, SIF (80 ppi) Bun Ester (Premium)	"	3.86	40	90	Mod.	"
Urethane foam, polyester caustic, T59G#2	"	3.44	40	90	"	"
Urethane foam, low density polyester caustic, LF-13-1C	"	3.25	40	90	"	"
Urethane foam, low ext. ether 2AP (63 ppi) L8-31-2B (washed with distilled water)	"	3.83	40	90	"	"
Urethane foam, polyether sheet 2 apped (washed with distilled water)	"	2.87	40	90	Slight	"
Urethane foam, SIF (80 ppi) Bun Ester (Premium) (washed with distilled water)	"	2.54	40	90	"	"
Urethane foam, low ext. ether 2AP (63 ppi) L8-31-2B (washed with methylene chloride)	"	2.33	40	90	"	"
Urethane foam, polyether sheet 2 apped (washed with methylene chloride)	"	4.26	40	90	Mod.	"
Urethane foam, SIF (80 ppi) Bun Ester (Premium) (washed with methylene chloride)	"	3.17	40	90	"	"
Varnish, conductive (Stoner Mudge)	Propellant M17	5.93	40	90	Excess	AL-S-46-66

PART TWO - COMPATIBILITY OF EXPLOSIVES WITH PLASTICS

Explosive	Plastic	Rating
Ammonium perchlorate	Nitrорubber	Negligible
Ammonium perchlorate, PIF-265	Teflon	"
Astrolite G Lot 0014	Polyethylene, low density	"
(liquid explosive)		
"	Neoprene rubber	Slight
Astrolite G	Ethylene propylene rubber	Negligible
Ball powder - see "Emite","propellant"		
Baratol (67/33)	Dapon resin	Negligible
"	Polyester	"
"	Polyester, Meta Seal 19V5	"
Benite	Loctite AV-10-10	Excessive
Benite powder (strands)	"	Excessive
Benite	Tape, pressure, 3M, #202	Negligible
Black powder, Lot DuP 36-1	Adhesive, EC 1099 (3M)	Negligible
Black powder, Lot DuP 36-2		"
Black powder, Lot KPC-4-14		"
Black powder	Polyethylene	"
Black powder, Grade A	Polyep/activator	"
Black powder A5	Amberlite resin	"
"	Delrin, DuPont	"
"	Epon 828/Versamid 125 (50/50)	"
"	Epon 828/Versamid 125 (55/45)	"
"	Epon 828/Versamid 125 (60/40)	"
"	Galvanoplast, conductive paint	Moderate
"	Laminac, 4116 and 4134	Negligible
"	Lexan GE141	"
Black powder, Class 7	Loctite AV-10-10	"
Black powder A5	Nylon scrim	"
"	Nylon epoxy laminate	"
"	Polypropylene, Avisun 840-1446	"
"	Selectron (Mix 5003/5214)	"
"	Silicone construction	"
"	sealant #SE-1201, uncured	"
"	Silicone sealant #Q 95-001, uncured	"
"	Silastic RTV 731 (uncured)	"
"	Silastic RTV 732 (uncured)	"
"	Tape, pressure, 3M, #202	"
"	Zytel 42 (nylon)	"
Black powder/fuze powder (50/50)	Adhesive, EC 880 (3M)	"
Black powder A5/fuze powder mix	Adiprene L 100	"
Black powder A5/fuze powder (50/50)	Formica super fast dry contact cement (Cyanamid)	"
Black powder/magnesium	Polyethylene caps	"
"	Polystyrene vial	"
Boron/potassium nitrate (2R pellets)	Astraceram	Negligible
"	Bakeline ERL 2795	"
"	Devcon B	"
"	Selectron	"
Casting powder, ABL 1852	Epon resin #911S	"
*Mixture only		
Casting powder, ABL 1408	Epon Resin #828	Slight to Moderate
Casting solvent, 73% NG, 27% TA, 1% 2nDPA (added)	Nitrорubber	Negligible
Casting Solvent NG	Rubber	"
"	Rubber, Columbia	"
"	Rubber, gum	"
"	Rubber, gum, B	"
"	Rubber, gum, G	"

Explosive	Plastic	Rating
Composition A5, Type 1/0.25% graphite	Tape, 3M #4253 UAL	Negligible
"	Tape, Mystic PN 7453	"
"	Tape, Permacel PN 112	"
Composition A5, HOL-SR-550-62	Velostat (polyethylene impregnated with graphite)	"
Composition B (stored 6 mo @ 51 C)	Adhesive, AK21D (cured 2 hr at 350 F)	"
Composition B	"	"
"	Adhesive, 828/140 (ground fine)	Moderate
"	" (as received)	Negligible
"	Adhesive, EC 870 (3M)	"
"	Adhesive, EC 1099 (3M)	"
Composition B (stored 6 mo @ 50 C)	Adhesive, EC 1386 (cured 1 hr @ 360 F)	"
Composition B	"	"
"	Adhesive, EC 2086, (as received)	"
"	" (ground fine)	Excessive
"	Adhesive, EC 2186 (as received)	Negligible
"	" (ground fine)	Excessive
"	Adhesive, Formula 3548-74 w/catalyst MPDA/LP	Excessive
"	Adhesive, R86020 (as received)	Negligible
"	" (ground fine)	Moderate
"	Adhesive 43D-D16 (cured or uncured)	Negligible
"	Adiprene L-100	"
"	Araldite 6005-25pbw, hardener 957pbw	"
Composition B	Bondmaster BU 1200-100pbw, catalyst part II, 40 pbw	"
Composition B, Grade A	Casting resin RCM-2, curing agent S (4 hrs @ 65 C)	Excessive
"	" (8 hrs @ 65 C)	Excessive
Composition B	Cellulose acetate	Negligible
"	Cellulose acetate butyrate	"
Composition B, Lot HOL-7-1879	Chemglaze, white gloss, (Hughson Chemical)	"
Composition B	Cyclocac T (ABS) (Marbon)	"
"	Delrin	"
Composition B, Lot HOL-71879	Delrin 500	"
Composition B	Devcon	"
"	Devcon (coated with acid proof paint)	"
"	Devcon mix (9/1)	Excessive
"	EC 612 (3M)	Negligible
"	Epiphen 825A (140pbw), modified (12pwb), converter (16pbw)	Excessive
"	Epocast N4S-066 Mod 1A	Excessive
Composition B	Epon X-81, catalyst Z and benzene	Negligible
"	Epon 820	"
"	Epon 820/TETA	Excessive
"	Epon 820/Versamid 140 (70/30)	Excessive
"	Epon 828	Negligible
"	Epon 828/Versamid 125 (uncured)	Exploded
"	" (cured)	Excessive
"	Epon 913	Negligible

Explosive	Plastic	Rating
Composition B	Rubber base adhesive, synthetic (3M) EC 612	Negligible
"	Silastic Gum #1	"
"	Silastic Gum #2, Lot 6861	"
"	Silastic Gum #3, Lot 813	"
"	Silicone grease #6	"
"	Tape, Permacel PN 112	"
"	Tape, pressure sensitive	"
"	Teflon film	"
"	Telemar (fluorocarbon)	"
"	Tremco M-5592 (Part A- 10pbw, Part B-20pbw)	Excessive
Composition B, Lot HOL-7-1879	Tubing, plastic, Flexible Z 202	Negligible
Composition B	Urethane (room temperature cured)	"
"	Versamid 125	Exploded
"	XR-6-092 resin (cured)	Negligible
Composition B4	Adhesive, EC 870	"
"	Adhesive, EC 2186-1 cured	Excessive
"	Adhesive, EC 2186-2 cured	Negligible
"	Adhesive, MIL-A-388A, Type 2	"
"	Cellulose nitrate (base) Type 2 cement	"
"	Dapon resin	"
"	Polyester	"
"	PV-918 (extra baked)	Moderate
Composition C3 - See "PE-3A"		
Composition C4	Acrylofil 040/35	Negligible
"	Adhesive, EC 1099 (3M)	"
"	Adiprene	"
"	Delrin	"
"	Devcon A/Devcon flux/ Ciba 951/Ciba 502	Negligible Moderate
"	Epocast	Excessive
"	Epon 829	Negligible
"	Styron, Class 1	"
"	Tape 3M, type 874	"
"	Vydax AR	"
Composition H6	Cellulose acetate	"
"	Cellulose acetate butyrate	"
"	Durez	"
"	Epon 828/Cardolite 6885/ Epon Acc. Z/Kaolin	"
"	Epoxy 826 (w/fiber glass)	"
"	Fiberite	Excessive
"	Fiberite 4030	Negligible
"	Foam-Silastic Q3-0031	"
"	Nuodex	"
"	Phenolic, CF 1	"
"	Polyester resin	"
"	Polyester resin, T-255042, pre-imp.	"
"	Polyester/aluminum resin	"
"	Polyester/asbestos	"
"	Polyurethane foam #1	"
"	RTV 501, silicone	"
"	RTV silicone rubber	"
"	Silastic 732 RTV (silicone rubber)	"
"	Solithane 113-302 or 113-325	"
"	Urethane (room temperature cured)	"

Explosive	Plastic	Rating
Diaminotrinitrobenzene - see DATB		
Emite, Lot X2676 (ball powder)	Epoxy 828/Versamid 125 5%/5% (cured or uncured)	Negligible
Explosive sheet, EL-506C	Adhesive	Negligible or No test
First fire composition	Delrin, DuPont	Negligible
First fire composition PA-PD-594, Type 1	Isochemrez #460 w/hardener #50 (cured)	"
"	"	Tubes broke on cooling
"	(uncured)	Negligible
"	Isochemrez #460 w/hardener #63 and catalyst 215X (cured or uncured)	"
First fire composition	Lexan GE 141	"
First fire mix, SI-155	Loctite, Grade A	Moderate
"	Loctite, grade A	Negligible
First fire composition	Polypropylene, Avisun 840- 1446	"
"	Zytel 42 (nylon)	"
Flash powder (50/50 red phosphorus/ magnesium)	Fiberite X-1942	"
"	Polystyrene, modified	"
"	Plenco, 2.75	"
Flex-X (flexible explosive)	Scotch tape, 3M, Lot 10, Core 0300	"
Flexible explosive	"	"
Fuses	Epoxy ERL 2774/Versamid 125 (2.5/1)	"
HBX-6	Laminac 4116	"
HEN 12 composition (Shillelagh Missile Heat Comp.)	Loctite AV 10-10	"
HMX	Epon 820/Versamid 140 (70/30), Adhesive A	"
"	McConnaplast 38	"
"	Nitrorubber	"
"	Separan NP10, Lot 258	"
"	Separan NP10, Lot 258/ KCL (SO ₄) ₂ (10/1)	"
"	Separan NP10, Lot 258/ NaCl (10/1)	"
"	Separan NP10, Lot 326	"
"	Separan NP20, Lot 8	"
"	Separan NP20, Lot 8/ KCL (SO ₄) ₂ (10/1)	"
"	Separan NP20, Lot 8/ NaCl (10/1)	"
"	Separan NP20, Lot 14	"
HMX-AL-Nylon	Adiprene L-MOCA-AGE	Negligible
"	Epiphen 825A	"
"	Epon 820/Versamid 140	"
HMX/A1/Nylon (66/25/9)	Epon 901-B-1	Excessive
HMX/Exon/DOS (95/4.4/.6)	Plastisol, RC, VP8-1	Negligible
HMX	Rubber, Silastic	"
HTA-3	Adiprene L-100 (MOCA-AGE)	"
"	Cellulose acetate	"
"	Cellulose acetate butyrate	"
"	Diallyl phthalate	Moderate
"	Epon 31-59	Negligible
"	Epon 820-125 or 820-125 HC	Excessive
"	Epon 820/Versamid 140 (70/30), Adhesive	Excessive

Explosive	Plastic	Rating
LFT-1 Comp (PI-F-510) (Gas generator)	Epoxy adhesive (cured or uncured)	Negligible
LFT-3	Bakelite ERL 2795	"
"	Selectron	"
Lead azide - see "Composition #1"		
Lead azide, RD 1333	Brolite (epoxy A423 & thinner T252)	"
"	Cab-O-Sil	"
Lead azide, PVA	"	"
Lead azide	Delrin	"
Lead azide, RD-1333	Epoxy/polyamide	"
Lead azide	Laminac 4116 and 4134 (50/50)	"
Lead azide, RD-1333	Lexan	"
"	Loctite 404	"
Lead azide (MIL-L-3055, Type I)	Loctite sealant, Type AV	"
Lead azide	Molylube #16	"
Lead azide, RD-1333	Mylar film (Schjelbond 300)	"
Lead azide, RD-1333	Polyisoprene rubber, Lot #A32	"
Lead azide, RD-1333	Polyurethane varnish	"
"	Polyvinyl acetate, Metex XZ-2	"
Lead azide	RTV-11 (uncured)	"
"	RTV-502, silicone rubber (uncured)	"
Lead azide	Alkyd resin, Plaskon 2201	"
"	Silastic RTV 732 (uncured)	Moderate
Lead azide, RD-1333	Silastic RTV 731 (uncured)	Negligible
"	Silastic Gum #1, #2 and #3	"
"	Silicone sealant	"
Lead azide	Teflon film	"
Lead azide, RD-1333	Velostat screening	"
Lead azide, dextrinated	Adhesive EC 1099 (3M) (95/5 EC 1099/benzene)	"
"	Epoxy 907, adhesive (M.S. Co.)	"
Lead styphnate	Adhesive, EC 880 (3M)	"
"	Adiprene L 100	"
"	Formica super fast dry contact cement	"
"	Loctite 404	"
Lead styphnate, basic	Molylube #16	"
Lead styphnate	Silastic RTV 731 (uncured)	"
"	Silastic RTV 732 (uncured)	"
"	Silicone sealant	"
Liquid explosive - see "Astrolite...."		
Minol-2 (40/40/20)	Inert sealer, Type 1 MIL-S-3105	"
"	"	"
"	(plus hot melt compound)	"
Minol-2 (40/40/20), modified	Coating compound, MIL-C-450, type 1 (cured)	"
Minol-2 (40/40/20)	"	"
Minol-2 (40/40/20), modified	Hot melt compound, MIL-C-3301	Moderate
Nitrocellulose compound	"	"
Nitrocellulose	Epoxy	Negligible
"	Phenol-formaldehyde (microballoons)	Compatible
"	Polyethylene, antistatic	"
Nitrocellulose + 2% DPA	Versamid 125	Exploded
Nitroglycerine	Phenol-formaldehyde (microballoons)	Compatible
"	Polyethylene, antistatic	"

Explosive	Plastic	Rating
OGK Casting Powder (Cast PL-2596) Output composition (60% lead azide)	Nitrorubber RTV 103 (uncured)	Negligible "
PBX Type A	Silastic Gum #1, #2 and #3	"
"	Teflon film	"
"	Tape, 3M #4253 UAL	"
"	Tape, Mystic PN 7453	"
"	Tape, Permacel PN 112	"
"	Mylar film (Schjelbond 300)	"
PE - plastic explosive PE 3A (RDX - Grade 1)	Resinated asbestos flock (Durestos RA5I)	Compatible
PETN	Adhesive, EC 2216 (3M) A & B (uncured)	Moderate
"	Delrin	Negligible
"	Epon 31-59 (cured or uncured)	"
"	Epon 31-59 Part A (uncured)	Moderate
"	Epon 31-59, Part B (uncured)	Negligible
"	Epon 820/Versamid 140	"
"	Epon 934 (cured or uncured)	"
"	Epon 934, Part A (uncured)	"
"	Epon 934, Part B (uncured)	Excessive
PETN, Class A, unwashed	Fiberite 5430 (epoxy/glass)	Negligible
PETN	Loctite 404	"
"	Phenolic	"
"	Polyester resin w/cobalt naphthenate and cyclohexanone peroxide paste	Compatible, cured resin (100C); not compatible, cured resin (120C); not compatible, uncured resin (120C)
PETN	Polyethylene	Negligible
PETN, Lot 23-2	Polyurethane EP 626/628 (liquid)	Moderate
PETN	Polyurethane varnish	Moderate
"	RTV 102 (cured or uncured)	Negligible
"	Rubber plugs, A35, for fuzes	Compatible
"	Rubber plugs, RB 24, for fuzes	"
"	Scotch Weld (3M), adhesive	Negligible
"	Scotch Weld (3M) EC-2216, Adhesive A (uncured)	Excessive
"	Scotch Weld (3M) EC-2216, Adhesive B (uncured)	Negligible
"	Silicone rubber, vulcanized, Silastic Grade 6508	Compatible
Photoflash powder - see "potassium perchlorate/aluminum"		
Photoflash powder (Mg/Al/KClO ₄)	Adhesive, Paisley	Negligible
Photoflash composition (Atomized aluminum and potassium perchlorate)	Cellulose acetate (film)	"
Photoflash powder Ca/Al/KClO ₄ (30/20/50)	Epon 828	"
Photoflash powder, Type III, Class A, (40/30/30)	"	"
"	Epon 828/Versamid (70/30)	"
"	Epon 828/Versamid XD-140 (70/30) (uncured)	"
Photoflash powder, (30/20/50), Ca/Al/KClO ₄	" (uncured)	"
"	" (cured)	"

Explosive	Plastic	Rating
Propellant ARP, composite cast charge, PIF-268	Teflon	Negligible
Propellant, ball powder	Adhesive, EC 826 (3M)	"
"	Mylar film	"
"	Mylar film w/adhesive, EC 826 (3M)	"
Propellant, ball powder, epoxy	RTV 732 (cured or uncured)	"
Propellant, cast double base	Epoxy adhesive (amine cured); Epophen ET-2-A and EL-5 w/hardener EHR-1	Compatible
Propellant, cast double base (5% aluminum)	Epoxy (amine cured); Epon 946, Parts A & B	"
"	Epoxy (anhydride cured); Epon 25-149, Parts A & B	"
"	Epoxy (amine cured) (40/60) Epikote 828 w/hardener Versamid 140	"
"	Epoxy (amine cured) (60/40)	"
"	Hydrocarbon, chlorinated Cereclor 42	"
"	Phenolic adhesive; Redux 775 liquid	"
Propellant, double-base, cast charge 5667	Teflon	Negligible
Propellant HEN-12	Conap 2510/Conacure AH-19 (50/50), after set-up PIF-21E	Excessive
"	NOPCO H201, PIF-28H	Excessive
"	NOPCO P502, PIF-29I	Excessive
"	NOPCO G502, PIF-30J	Negligible
Propellant HEN-12	Polylite, 50/50-34-721/34-800, after set-up PIF-25E	Excessive
"	Polylite, ED 50/50, 1081/34-800, after set-up PIF-25G	Excessive
"	Polystyrene #1 and #2 (PIF-31K and PIF-32L)	Negligible
"	Polyurethane, M (Band cook-off protectors)	"
Propellant HEN-12 (N-5)	Polyurethane, M (Band cook-off protectors)	"
Propellant HEN-12	Scott foam (80 ppi), SIF White; PIF-17A	Moderate
"	Scott foam (80 ppi), Custom, PIF-18B	Excessive
"	Scott 1/32" Standard White Sheet, PIF-19C	Excessive
"	Scott 1/8" Premium Beige Sheet, PIF-20D	Moderate
"	Urethane foam, low ext. ether 2AP, (63 ppi) L8-31-2B	Excessive
"	Urethane foam, polyether sheet 2 apped	Excessive
"	Urethane foam, SIF (80 ppi) Bun Ester (Premium)	Moderate
"	Urethane foam, polyester caustic, T59G#2	"
"	Urethane foam, low density polyester caustic, LF-13-1C	"
Propellant HEN-12	Urethane foam, low ext. ether 2AP, (63 ppi) L8-31-2B (washed with distilled water)	"
"	Urethane foam, polyether sheet 2 apped (washed with distilled water)	Slight

Explosive	Plastic	Rating
Propellant M2	MCS-33-1, -2 or -3 (epoxy)	Negligible
"	Nylon epoxy laminate	"
"	Nylon scrim	Moderate
Propellant M2 (separate w/fiberglass)	Phenolic resin, Plenco #5246	Negligible
Propellant M2, Lot IB-6616-1 (single perf grain)	Plenco 2.75	"
Propellant M2	Polyethylene	"
"	Raybestos R1	"
"	Rayon, Elk #140 (9-22-63)	"
Propellant M5	Adhesive, EC 826	Excessive
"	Epoxy 828	Excessive
"	Epoxy 437	Excessive
Propellant M5, flake	Epoxy, H-1863	Negligible
"	Laminac, Expt 126-4	"
"	Laminac, Expt 126-4/ Laminac 4173 (25/75)	"
Propellant M5	Polyester (3M, #850) (pressure sensitive tape)	"
Propellant M5 flake	Polyester resin No. 1 w/0.87 polyester blue color paste	"
"	Polyester resin No. 2 w/0.57 polyester blue color paste added	"
Propellant M5, Lot RAD-38141	Polyester/Fiberglass (PD-12-59)	"
Propellant M5	Polystyrene #1, #2 or #3	"
"	Rubber base polymer; Para Seal	Moderate
"	Silastic 140	Negligible
Propellant M6, OKLA 32410	Acrylic/rayon blend	"
Propellant M6	Cycolac LTH 3003	"
"	Galvanoplast, conductive paint	"
Propellant M6, OKLA 32410	Rayon, Elk #140 (9-22-63)	"
Propellant M6	Rubber base liner	Excessive
"	Rubber base polymer; Para Seal	Negligible
Propellant M7	Adhesive, Angier SW 608	"
"	Adhesive, Angier SW 608 (grey enamel)	"
"	Adhesive, EC 1838 B/A (3M)	Excessive
"	Galvanoplast, conductive paint	Excessive
"	Ethylene propylene, polymer	Slight
"	Neoprene EC 870	Moderate
Propellant M7, paint	"	Negligible
"	Neoprene, Atlantic Brand	Excessive
Propellant M7	"	Excessive
Propellant M7, Lot 50615-55	Polyolefin film	Negligible
Propellant M7	RTV, Dow Corning Q95-015 (cured)	Excessive
"	"	Moderate
"	(uncured)	"
"	RTV 732 (uncured)	Negligible
Propellant M7, RAD-50615-55	RTV-102, adhesive; grey paint resisting enamel	"
"	RTV 732, adhesive; grey paint resisting enamel	"
Propellant M7	Rubber base enamel, chlorinated B69A14	"
Propellant M8	Adhesive, Eastman 910	Moderate
"	Adhesive, plastic trim	Negligible
"	Cellophane, DuPont	"
"	Insulation, RPD 150	"
"	Lexan	"
"	MCS-33-1, -2, or -3 (epoxy)	"
"	PPO (Polyphenylene oxide)	"
"	Rubber compound XC 45 or XC 63	"

Explosive	Plastic	Rating
Propellant M17	Adhesive, EC 1099 (3M)	Negligible
"	Adhesive, EC 1359 (3M)	"
"	Epon 828, asbestos filled TETA #3	Excessive
"	Epon 828/TETA #3 graphite filled	Excessive
"	Epon 828/TETA #3 asbestos filled	Excessive
"	Cycolac LTH 3003	Negligible
"	Foam Flex Sheet #2	Excessive
"	Polyester solid foam #5	Excessive
"	Polyester solid foam #7	Excessive
"	Polyurethane SX-58, Napco	Negligible
"	Rubber base polymer; Para Seal	Excessive
"	Varnish conductive (Stoner Mudge)	Excessive
Propellant M26, Lot RAD-SR-5-2-62	Loxite No. 7021	Excessive
"	Pliobond 20	Moderate
"	Pliobond 30	Excessive
Propellant M26E1, Lot RAD-PE- 162-22	Epoxy resin/ball powder, M6 (90/10)	Excessive
Propellant M30	Elastomer XD-38	Moderate
"	Elastomer 7D-10	Negligible
Propellant M30, Lot PA-63558	Loxite No. 7021	Excessive
"	Pliobond 20	Moderate
"	Pliobond 30	Excessive
"	Polyester film tape, Scotch brand #850	Negligible
Propellant M30	Polyurethane	"
Propellant MDB-7	Adhesive, EC 826 (3M)	"
Propellant MDB-7 (Expt 5685)	Cellulose acetate/fiber glass tape/epoxy	Excessive
Propellant MDB-7 (Expt 6585)	"	Negligible
Propellant MDB-7 (Expt 5685)	Cellulose acetate/fiber glass tape/Selectron 5119	Negligible
Propellant MDB-7 (Expt 6585)	"	"
Propellant MDB-7	Mylar film	"
"	Mylar film with adhesive, EC 826 (3M)	"
Propellant N5	Silastic RTV-S-5370 (foam)	"
Propellant NH - Singlebase (NC/DNT/DBP)(86/10/3)		
Propellant NH	ABS	None/slight
Propellant NH, vapors	Acrylonitrile rubber gasket, with brass contact	Not recommend- ed
Propellant NH	Acrylonitrile/styrene	None/slight
Propellant NH, vapors	Butyl rubber, gasket, with brass contact	Superior service life
Propellant NH	Chlorinated polyether	None/slight
Propellant NH, vapors	Neoprene gasket, with brass contact	Fairly long service life
Propellant NH	Nylon 6, 6	None/slight
"	Penton	"
"	Polyacetal	"
"	Polycarbonate	"
"	Polyester/glass laminate	"
"	Polypropylene	"
"	PVC (rigid)	"
"	Polystyrene	"
"	Polyvinyl chloride (rigid)	"
"	Rubber, butyl	Slight/moderate
"	Rubber, natural	Moderate
"	Rubber, neoprene	Moderate/severe
"	Rubber, nitrile	Severe
"	SAN	None/slight

Explosive	Plastic	Rating
Propellant T28	Adhesive, EC 1022	Negligible
"	Epon 828/Versamid 125	Excessive
"	Epoxy/ball propellant (M6)	Excessive
Propellant T28E1	Epon 828/Versamid 125 (cured or uncured)	Excessive
Propellant T28E1	Epon 946 A & B (cured or uncured)	Negligible
"	Epoxy 31B	Excessive
"	Epoxy 1210	Excessive
"	Epoxy 9:53H1494	Excessive
"	Epoxy/ball propellant (M6)	Excessive
"	Epoxy/propellant (M6)	Excessive
"	Polyurethane, Epocast	Negligible
"	RTV-732 (cured or uncured)	"
"	Rubber, GRS	"
Propellant T36	Acrylic, Zefran fiber	Excessive
"	Adhesive EC 1099 (3M)	Negligible
"	Adhesive EC 1099 (3M)/ polyurethane	"
"	Elastomer 455-1	"
"	Elastomer 510	Moderate
"	Elastomer B-8-P	Negligible
"	Elastomer I 19	"
"	Elastomer I 51 EF	"
"	Elastomer M75E2 Fl.	"
"	Elastomer N 117	Moderate
"	Elastomer S54BIDEF2	"
"	Elastomer S-54DE-F2	"
"	Elastomer S-55-F4	"
"	Elastomer S-133 or S-133B	Negligible
"	Elastomer S-135 or S-136	"
"	Elastomer Z46E	Excessive
"	Elastomer Z 103	Moderate
"	Elastomer Z 110CE2F3	Excessive
"	Elastomer Z 118 CIF4	Negligible
"	Elvax liner (vinyl)	"
"	Ethylene propylene	Excessive
"	Nylon epoxy laminate	Excessive
"	Nylon scrim	Excessive
"	Pliobond	Excessive
"	Pliobond/polyurethane	Excessive
Propellant T36, RAD-36-61	Polyester solid foam #5 or #7	Excessive
Propellant T36	Polyurethane A	Negligible
"	Polyurethane B	"
"	Polyurethane B	Excessive
"	Polyurethane C	Negligible
"	Polyurethane C	Excessive
"	Polyurethane D	Excessive
"	Polyurethane E	Negligible
"	Polyurethane F	"
"	Polyurethane foam	"
"	Polyurethane #1 (upper liner)	"
"	Polyurethane #2 (lower liner)	"
"	Polyurethane foam #10	"
"	Polyurethane foam #13	"
"	Polyurethane foam #8	"
Propellant T36, PA 63558	Rayon, Elk #140	"
Propellant T36	Rubber, Burke	Moderate
"	Rubber, Burke	Negligible
"	Rubber, Burke (American obturators)	Excessive
"	Rubber, Burke (Obturators)	Moderate
"	Rubber, Burke, M981, L-4	Negligible
"	Rubber, Burke, M981, R-1	Moderate

Explosive	Plastic	Rating
RDX	Epoxy/polyamide (OD) MIL-C-22750	Excessive
"	Epoxy/phenolic MIL-C-52232	Negligible
RDX, Grade 1A	Ethylene propylene gum rubbers (Dutral N, EPR, S, and EPIM) (Montecatini)	Compatible
RDX	Fiberite	Negligible
"	Fiberite 4030	"
"	Fiberite 5430 (epoxy/glass)	Excessive
RDX/Kel F (90/10)	Furane/CM catalyst/Gypsum (10/2/10)	No test
RDX	Galvanoplast, conductive paint	Negligible
"	Glastimat #1	"
RDX Type II, Lot PA 2-10 w/stearic acid 271-17-66	Hysol cake (cured)	Slight
"	Hysol (uncured)	Excessive
RDX	Loctite 404	Negligible
RDX, Type II	Loctite, Quick Set 404	Negligible
RDX, Class A, Type B	Loctite AA15-1	"
RDX	McCannaplast 38	"
"	Molycoat	"
"	Mylar film	"
"	Mylar film (Schjelbond 300)	"
RDX, Grade 1A	Neoprene rubber cements (Neoseal #6 and #7)	Compatible
RDX	Nuodex	Negligible
RDX, Class A, Type B	PBAA type polymer	"
RDX (HOL 4-57)	Petrin acrylate, monomer blend #13	"
RDX	Phenolic	Moderate
"	Phenolic CF1	Negligible
RDX, Class A, Type B	Plastisol rubber	"
"	Polyester resin	"
RDX, Grade 1A; RDX/TNT	Polyester (w/cobalt naphthenate and methyl ethyl ketone peroxide)	Compatible when fully cured. Uncured resins not compatible.
RDX, Grade 1A	Polyester resin with cobalt naphthenate and cyclohexanone peroxide paste	Compatible cured resin; or not compatible cured resin.
RDX	Polyester resin, T-255042, pre-imp.	Negligible
RDX, Grade 1A	Polyethylene, antistatic	Compatible
RDX, Grade 1A, coated with wax emulsion, 2% uptake	Polyethylene wax emulsion coating (85% PE, 15% oleic acid)	"
RDX, Grade 1A	Polyvinyl chloride, tubing, plasticized	"
RDX	Polyurethane varnish	Negligible
RDX	RTV silicone rubber	Negligible
RDX, Class A, Type B	RTV-102-6E	Negligible
RDX	RTV-732	"
"	Rubber plugs, A35, for fuzes	Compatible
"	Rubber plugs, RB24, for fuzes	"
RDX	Scotchply 1100	Negligible
RDX, Type A	Scotch Weld (3M) EC 2216, Adhesive B (uncured)	Excessive
RDX	Scotch Weld (3M), adhesive	Excessive
"	Separan NP10 Lot 258	Negligible
"	Separan NP10 Lot 258/NaCl (10/1)	"
"	Separan NP10 Lot 258/KCl (SO ₄) ₂ (10/1)	"

Explosive	Plastic	Rating
Tetryl booster pellet (not contaminated 20 and 21)	Polysulfide rubber sealant	Negligible
" (not contaminated 60 and 61)	"	"
Tetryl, KNK 7-063	Polyurethane EP 626/628 (liquid)	Excessive
"	RTV 102 (cured or uncured)	Negligible
Tetryl booster pellet	RTV-732, vulcanizing rubber (uncured)	"
Tetryl	Silastic RTV 731 or RTV 732 (uncured)	"
"	Silicone construction sealant #SE-1201 (uncured)	"
"	Silicone sealant #Q95-011 (uncured)	Excessive
Tetryl, KNK 7063	Tape, Permacel PN 112	Negligible
Tetryl	Urea-formaldehyde, paper impregnated with.	Compatible
Tetrytol (70/30)	Adhesive, EC 870 (3M)	Excessive
"	Adhesive, EC 1099 (3M)	Excessive
Tetrytol	Neoprene	Negligible
TNT	ABS	Moderate
"	Acrylonitrile/styrene	"
"	Adhesive-coated fabric tape	Compatible
TNT + 10% calcium silicate	Alkyd enamel, priming paint, MIL-P-22332 (cured) with inert sealing compound, MIL-S-3105	Negligible
TNT	Chlorinated polyether	None/slight
TNT/AL Meg Aluminum alloy granules EXXO-30 (80/20)	Coating MIL-C-450 (cured) plus asphalt hot melt, MIL-C-3301	Negligible
TNT, Grade 1	Coating, asphalt hot melt, MIL-C-3301 plus AL Meg Aluminum granules, EXXO 90-30	"
TNT	Delrin	"
"	Epon 820/Versamid 140 (70/30), Adhesive A	Excessive
"	EPT	Slight/moderate
"	EVA	"
"	Galvanoplast, conductive paint	Moderate
TNT + 1% calcium silicate, tech grade	G Primer SS 4004	Negligible
TNT, Type 1	"	"
TNT	Hypalon	Slight/moderate
TNT/AL Meg Aluminum granule EXXO 90-30 (80/20)	Inert sealer, MIL-S-3105B, Type 1	"
TNT/AL Meg Aluminum (50/50)	"	"
TNT/AL Meg Aluminum granules EXXO 90-30 (80/20)	" (plus coating hot melt MIL-C-3301)	"
TNT, Type 1 + 1% calcium stearate, tech grade	Inert sealer #1, MIL-S-3105	Negligible
TNT	MBS	None/slight
TNT, Type 1/Nucure 28	Silicone rubber (uncured)	Negligible
TNT	Nuodex	"
"	Nylon 6, 6	None/slight
"	Penton	"
"	Petrin acrylate, blend #13	Negligible
"	PF resins	None/slight
"	Phenoxy resin	Slight/moderate
"	Polyacetal	Severe
"	Polycarbonate	Moderate

Explosive	Plastic	Rating
Tritonal (80/20)	Adhesive, EC 1126 (3M)	Negligible
Tritonal (80/20) + 1% calcium silicate	Alkyd enamel, priming paint, MIL-P-22332 (cured or uncured)	"
Tritonal (80/20) + 50% calcium silicate	Alkyd enamel, priming paint, MIL-P-22332 (cured or uncured)	"
Tritonal (80/20) + 1% calcium silicate	Alkyd enamel, priming paint, MIL-P-22332 (cured) with inert sealing compound, MIL-S-3105	"
Tritonal (80/20) + 10% calcium silicate	Alkyd enamel, priming paint, MIL-P-22332 (cured) with inert sealing compound, MIL-S-3105	"
Tritonal (80/20)	Cellulose acetate	"
"	Cellulose acetate butyrate	"
"	Elastic compound, # 155.2	"
"	Epon adhesive, Shell 948 (cured)	"
"	Epon adhesive, Shell 942	"
"	Epon adhesive, Shell 953	"
"	G. Primer SS4004 (uncured)	"
Tritonal (80/20) + 1% calcium silicate, tech grade	G. Primer SS 4004	"
Tritonal (80/20) modified	Hot melt compound, MIL-C-3301 plus distilled water	"
Tritonal (80/20)	Inert sealer #1, MIL-S-3105	"
Tritonal (80/20) + 1% calcium silicate, tech grade	"	"
Tritonal (80/20) modified	Inert sealer, MIL-S-3105 plus distilled water	"
Tritonal (80/20)	Lastomer coating C-717	"
"	Mortite #89, #5001 or #5700-57	"
Tritonal	Nuodex	"
Tritonal (80/20)	Nucure 28, silicone rubber (uncured)	"
Tritonal	Polyethylene (high density)	"
Tritonal (80/20)	Permagum #570.41 or #576.1	"
Tritonal (80/20) + 1% calcium silicate	Primer, MIL-P-22332 (cured) plus Prestite (50/50)	"
Tritonal (80/20) + 10% calcium silicate	"	"
"	"	"
Tritonal (80/20)	plus trichlorethylene	"
Tritonal (80/20) PA-PD-126	Pumpable caulk C-768	"
Tritonal (80/20)	Quaker Koat	"
"	RTV silicone rubber	"
"	RTV 7 (cured or uncured)	"
"	RTV 7/Nucure 28 (uncured)	"
"	RTV 11 (cured or uncured)	"
"	RTV 11/Nucure 28 (uncured)	"
"	RTV 7 - Nucure 28/RTV 11 - Nucure 28 (uncured)	"
Tritonal (80/20) + 1% calcium silicate, tech grade	"	"
Tritonal (80/20), plus 10% calcium silicate	RTV 616 or RTV 634 (uncured)	"
Tritonal (80/20)	Sealer, EC 1279	"
Tritonal (80/20) + 1% calcium silicate	Silicone compound, TBS-757B (curing agent)	Excessive
"	Silicone compound, TBS-757A	Negligible
"	Silicone compound TBS-757A + TBS-757B (cured)	"

APPENDIX A

SOURCES OF INFORMATION,
WITH EXAMPLES OF WITHIN-REPORT REFERENCE NUMBERS

Source	Example of Reference
Defense Standards Laboratories Department of Supply Victoria, Commonwealth of Australia Testing methods are identified with citations; primarily elevated temperature processing with degree of breakdown of explosive indicated.	DSL - Australia* * by letter, Victoria, 17 Jan 68, s/P. Dunn
Explosives Research and Development Establishment, Waltham Abbey, Essex, England Testing primarily involved elevated temperature storage of the contact materials, with subsequent physical testing of the plastic rather than the explosive. Primarily measured was the physical effect of the explosive on the plastic.	ERDE 9/M/53; ERDE 7/M/65; WAM/172/01** ** by letter, Ref ZB/ 74/02, dated 31 Jan 68, s/R.N.C. Strain
Picatinny Arsenal, Dover, New Jersey Reports from the Analytical Chemistry Laboratory Testing employed mostly the Vacuum Stability Test for gas evolution at elevated temperature; or infrequently the Propellant Heat Test, for bleaching of indicator paper. Primarily measured is the degree of breakdown of the explosive in contact with the plastic.	59-H1-XX; or AL-xx-xx; or AL-S-xx-xx (See Appendix C)
U. S. Naval Ammunition Depot Crane, Indiana, Quality Evaluation Department Testing by use of a modified Henkin Test, involving comparison of the temperature of explosion of a mixture submerged in a Wood's metal bath with that of the explosive alone. Primarily shows the degree of breakdown of the explosive material.	USNAD-C*** *** by letter, 15 Feb 67, s/ R. E. Klausmeier
U. S. Naval Ordnance Station Indian Head, Maryland This work primarily involved the Vacuum Stability Test, with degree of breakdown of explosive indicated.	USNOS-IH**** **** by letter, 22 Mar 68, s/ John E. Morgan

Procedure

The procedure for the vacuum stability test is followed in this test. Normally the test temperature is 100°C , but in special cases it may be raised to 120°C or lowered to 90°C or 75°C . The duration of the test is 40 hours.

For the basic unit (one explosive and one contact material) select 3 sample tubes. Into the first tube place 2.5 ± 0.01 grams of the explosive material, into the second tube place 2.5 ± 0.01 grams of the contact material, and into the third tube place 2.5 ± 0.01 grams of the explosive material and 2.5 ± 0.01 grams of the contact material (c).

Blend the materials which have been placed in the third tube by appropriate agitation, being careful not to lose any of the materials or to get them onto the ground-glass throat of the sample tube. (This might make for an insecure junction between the sample tube and the manometer). Complete the three assemblies by joining the capillary tubes to the sample tubes and proceed as in the vacuum stability test.

Evaluation

In determining the degree of reactivity of the materials under test, the materials processed separately are used as controls. The reactivity (or chemical deterioration) of the explosive is measured by comparing the volume of gas generated by the mixture of the explosive and the chosen contact material with the volume of gas generated by the controls.

The extent of reactivity is then calculated by the following equation:

$$R = C - (A + B)$$

where:

R = extent of reactivity, or volume of gas generated by the mixture in excess of the controls

C = volume of gas generated by the mixture

A = volume of gas generated by the explosive

B = volume of gas generated by the contact material

(c) These weights are "standard". Variations are sometimes imposed by (1) the wishes of the engineer, (2) limited supply of the materials to be tested, or (3) limitations on the amount of explosive that is safe to test. (See Appendix C)

SILVERED VESSEL TEST (80 C)

This test gets its name from the "silvered" or "vacuum-flask" type of container used. The usually well-ground sample is weighed into the flask, and a thermometer is inserted to such depth that the bulb is at about the center of the mass. The whole is inserted into a well in an elevated temperature bath (usually at 80 C) and maintained at that temperature for 500 hours. Periodic readings are taken for detection of mass temperature rise, as indicative of deterioration of the sample under test.

MODIFIED HENKIN TEST (g)

This test determines the endurance of an explosive or mixture when submerged in a Wood's metal bath. The test pertains particularly to explosives; but it is believed that, once the test behavior of an explosive is known, the change in behavior of an explosive/contact material mixture will show significance from the compatibility standpoint.

This test is discussed in I and E C, PRODUCT RESEARCH AND DEVELOPMENT, September 1962, "Incompatibility in Explosive Mixtures" by R. N. Rogers, p 169.

ACCELERATED STORAGE AND PHYSICAL TESTING (ERDE)

Of the works reported, only the Explosives Research and Development Laboratory used the accelerated storage test of contact materials to any great extent. They followed such storage with physical testing of the plastic or elastic materials, rather than the testing of the explosives.

In the United States, this type of work was conducted largely before 1959, and results are reported in PATR 2595.

The method followed by ERDE is as follows:

The thermoplastics were injection moulded and the vulcanized rubbers were cut into dumb-bells of a design previously prescribed.

Dumb-bells of each material were conditioned before exposure by storing them in an uncharged desiccator for 48 hours at room temperature. Each dumb-bell was then accurately weighed (to the nearest 0.001 g.) and the width and thickness measured (to the nearest 0.001") at several points along its length.

Small trays to hold three dumb-bells were made from aluminum foil, and molten TNT was poured in to cover the bottom. While the explosive was still molten, three dumb-bells were laid in each tray and covered with sufficient molten explosive to ensure complete immersion of the test pieces. The trays were allowed to cool to room temperature before placing them in groups of four (one for each withdrawal at 1, 3, 6, and 12 months) in an aluminum container which was covered, sealed and placed in an oven at $60^{\circ} \pm 0.5^{\circ} \text{C}$.

APPENDIX C

PROPORTIONS OF THE CONTRACT MATERIALS USED IN THE REACTIVITY TESTS AT
PICATINNY ARSENAL, AS REPORTED HEREIN

Report No.	Test Proportion (gm/gm)*	Report No.	Test Proportion (gm/gm)*	Report No.	Test Proportion (gm/gm)*
59-HL-10	2.5/2.5	AL-S-79-61	2.5/2.5	AL-S-19-63	2.5/2.5
59-HL-11	2.5/2.5	AL-S-80-61	2.5/2.5	AL-S-26-63	2.5/2.5
59-HL-78	2.5/2.5	AL-S-81-61	2.5/2.5	AL-S-30-63	0.5/5.0
59-HL-263	n/a	AL-S-102-61	2.5/2.5	AL-S-34-63	2.5/2.5
59-HL-264	1.25/1.25	AL-S-116-61	2.5/2.5	AL-S-36-63	2.5/2.5
59-HL-430	2.5/2.5	AL-S-1-62	2.5/2.5	AL-S-37-63	2.5/2.5
59-HL-487	0.5/5.0	AL-S-2-62	1.0/1.0	AL-S-39-63	0.5/5.0
59-HL-489	2.5/2.5	AL-S-4-62	2.5/2.5	AL-S-41-63	1.0/1.0
59-HL-567	2.5/2.5	AL-S-6-62	2.5/2.5		2.5/2.5
59-HL-570	2.5/2.5	AL-S-9-62	2.5/2.5	AL-S-43-63	2.5/2.5
59-HL-61.5	2.5/2.5	AL-S-11-62	2.5/2.5	AL-S-49-63	2.5/2.5
AL-2-59	2.5/2.5	AL-S-13-62	2.0/2.0	AL-S-52-63	2.5/2.5
AL-3-59	2.5/2.5	AL-S-19-62	2.5/2.5	AL-S-53-63	2.5/2.5
AL-4-59	1.0/1.0	AL-S-21-62	2.5/2.5	AL-S-56-63	2.5/2.5
AL-S-4-59	2.5/2.5		0.5/5.0	AL-S-61-63	0.5/5.0
AL-S-9-59	2.5/2.5	AL-S-23-62	0.5/5.0	AL-S-62-63	2.5/2.5
AL-S-11-59	n/a		2.0/2.0	AL-S-64-63	1.0/1.0
AL-14-59	2.5/2.5		2.5/2.5	AL-S-67-63	2.5/2.5
AL-S-22-59	2.5/2.5	AL-S-24-62	n/a	AL-S-70-63	2.5/2.5
AL-S-26-59	2.5/2.5	AL-S-27-62	2.5/2.5	AL-S-74-63	2.5/2.5
AL-S-36-59	1.0/1.0	AL-S-29-62	2.5/2.5		1.0/1.0
59-AL-S-37	2.5/2.5	AL-S-30-62	2.5/2.5	AL-S-83-63	2.5/2.5
AL-S-56-60	0.5/5.0	AL-S-32-62	0.5/5.0	AL-S-93-63	2.5/2.5
AL-S-61-60	0.5/5.0	AL-S-35-62	2.5/2.5	AL-S-97-63	2.5/2.5
AL-S-62-60	2.5/2.5	AL-S-37-62	0.5/5.0	AL-S-99-63	n/a
AL-S-64-60	2.5/2.5	AL-S-37-62	0.5/5.0	AL-S-103-63	2.5/2.5
AL-S-65-60	2.5/2.5	AL-S-38-62	0.5/5.0	AL-S-106-63	2.5/2.5
AL-S-67-60	0.5/5.0	AL-S-39-62	0.5/5.0	AL-S-112-63	2.5/2.5
AL-S-72-60	2.5/2.5	AL-S-44-62	n/a	AL-S-117-63	n/a
AL-S-74-60	1.0/1.0	AL-S-50-62	0.2/1.2	AL-S-118-63	2.5/2.5
AL-S-79-60	2.5/2.5		0.1/1.1	AL-S-122-63	2.5/2.5
AL-S-82-60	1.0/1.0	AL-S-51-62	2.5/2.5		3(1.6)/5.0
AL-S-84-60	1.0/1.0	AL-S-52-62	2.5/2.5	AL-S-125-63	2.5/2.5
AL-S-86-60	2.5/2.5	AL-S-54-62	2.5/2.5	AL-S-126-63	2.5/2.5
AL-S-88-60	2.5/2.5	AL-S-59-62	2.5/2.5	AL-S-130-63	2.5/2.5
AL-S-93-60	2.5/2.5	AL-S-63-62	2.5/2.5	AL-S-131-63	2.5/2.5
AL-S-98-60	2.5/2.5	AL-S-67-62	0.5/5.0	AL-S-123-63	2.5/2.5
		AL-S-69-62	2.5/2.5	AL-S-134-63	n/a
AL-S-104-60	2.5/2.5	AL-S-73-62	2.5/2.5	AL-S-135-63	2.5/2.5
AL-S-106-60	0.5/5.0	AL-S-76-62	2.5/2.5	AL-S-136-63	3(1.6)/5
AL-S-108-60	1.0/1.0	AL-S-79-62	2.5/2.5	AL-S-140-63	2.5/2.5
AL-S-113-60	2.5/2.5	AL-S-84-62	2.5/2.5	AL-S-154-63	2.5/2.5
AL-S-114-60	2.5/2.5	AL-S-93-62	2.5/2.5	AL-S-5-64	2.5/2.5
AL-S-115-60	2.5/2.5	AL-S-94-62	2.5/2.5		3(1.67)/5
AL-S-124-60	2.5/2.5	AL-S-95-62	2.5/2.5	AL-S-11-64	2.5/2.5
ERS-HE-125-60	2.5/2.5	AL-S-96-62	2.5/2.5	AL-S-12-64	0.229/2.5
AL-S-126-60	1.0/1.0	AL-S-97-62	2.5/2.5	AL-S-17-64	0.5/2.5
AL-S-129-60	2.5/2.5	AL-S-99-62	2.5/2.5	AL-S-18-64	2.5/2.5
AL-S-131-60	2.5/2.5	AL-S-100-62	0.5/5.0	AL-S-23-64	0.229/2.5
AL-S-133-60	2.5/2.5	AL-S-103-62	2.5/2.5	AL-S-26-64	n/a
AL-S-142-60	0.5/5.0	AL-S-106-62	2.5/2.5	AL-S-39-64	2.5/2.5
AL-S-149-60	2.5/2.5	AL-S-110-62	0.5/5.0	AL-S-43-64	3(1.67)/5
AL-S-150-60	2.5/2.5	AL-S-111-62	2.5/2.5	AL-S-44-64	2.5/2.5
AL-S-151-60	1.0/1.0	AL-S-115-62	2.5/2.5	AL-S-50-64	2.5/2.5
	2.5/2.5	AL-S-116-62	2.5/2.5	AL-S-52-64	1.25/1.25
AL-S-153-60	2.5/2.5	AL-S-117-62	1.25/1.25	AL-S-55-64	2.5/2.5
AL-S-34-61	0.5/5.0		3(1.66)/5	AL-S-60-64	2.5/2.5
AL-S-42-61	0.5/5.0	AL-S-118-62	2.5/2.5	AL-S-65-64	2.5/2.5
AL-S-55-61	0.5/5.0	AL-S-124-62	2.5/2.5	AL-S-66-64	2.5/2.5
AL-S-65-61	1.0/1.0	AL-S-2-63	2.5/2.5	AL-S-67-64	2.5/2.5
AL-S-70-61	2.5/2.5	AL-S-5-63	0.25/2.5	AL-S-80-64	0.5/5.0
AL-S-71-61	2.5/2.5	AL-S-14-63	2.5/2.5	AL-S-81-64	2.5/2.5
AL-S-75-61	4(1.25)/5.0	AL-S-16-63	2.5/2.5	AL-S-83-64	1.25/1.25
AL-S-76-61	2.5/2.5				

* Expressed as "grams of plastic"/"grams of explosive"

UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)		2a. REPORT SECURITY CLASSIFICATION	
Plastics Technical Evaluation Center		Unclassified	
		2b. GROUP	
3. REPORT TITLE			
COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II), an Addendum to Picatinny Arsenal Technical Report 2595.			
4. DESCRIPTIVE NOTES (Type of report and inclusive dates)			
Tabulation type report; 1959 to present			
5. AUTHOR(S) (First name, middle initial, last name)			
Beach, Norman E. and Canfield, Vincent K			
6. REPORT DATE		7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
April 1968			n/a
8a. CONTRACT OR GRANT NO.		9a. ORIGINATOR'S REPORT NUMBER(S)	
n/a		PLASTECH Report 33	
b. PROJECT NO.			
n/a			
c.		9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)	
d.		None	
10. DISTRIBUTION STATEMENT			
Qualified requesters may obtain copies of this report from DDC. Public sale is through Clearing house for Federal Scientific and Technical Information (CFSTI).			
11. SUPPLEMENTARY NOTES		12. SPONSORING MILITARY ACTIVITY	
n/a		Office of Defense Research and Engineering	
13. ABSTRACT			
<p>A roundup of data on the compatibility of explosives with polymers was made by Miss Marjorie St Cyr in the years immediately prior to 1959. This work was reported as PATR 2595, dated March 1959.</p> <p>The work herein reported covers the explosives/plastics compatibility data from 1959 through 1967. The effort has been to include all available hard data from the United Kingdom, Canada, Australia and these United States.</p> <p>The present study is given a simplified form: in alphabetical order (first) by trade name or generic name of the plastic and (second) by explosive. By this means the reader can tell (first) what explosives a plastic is compatible with and (second) what plastics can be used safely with a particular explosive.</p> <p>For this report, the search was stretched to include adhesives and elastomers.</p>			

AD Accession No.
Plastics Technical Evaluation Center (PLASTEC) Picatinny Arsenal,
Dover, New Jersey 07801

COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II)
(An Addendum to Picatinny Arsenal Technical Report 2595)
by Norman E. Beach and Vincent K. Canfield

PLASTEC Report 33, April 1968 78pp.
Unclassified Report

A roundup of data on the compatibility of explosives with polymers was made by Miss Marjorie St. Cyr in the years immediately prior to 1959. This work was reported as Picatinny Arsenal Technical Report 2595, dated March 1959.

The work herein reported covers the explosives/plastic compatibility data from 1959 through 1967. The effort has been to include all available hard data from the United Kingdom, Canada, Australia and these United States.

The present study is given a simplified form: in alphabetical order (first) by trade name or generic name of the plastic and (second) by explosive. By this means the reader can tell (first) what explosives a plastic is compatible with, and (second) what plastics can be used safely with a particular explosive.

For this report, the search was stretched to include adhesives and elastomers.

UNCLASSIFIED

Plastics - Compatibility
Polymers - Compatibility
Elastomers - Compatibility
Adhesives - Compatibility
Propellants - Solid
Explosives
Compatibility

I. Beach, N. E., Canfield, V. K.
II. Title

UNTERMS

Plastics
Polymers
Elastomers
Adhesives
Propellants
Explosives
Compatibility

DISTRIBUTION

Through FOIR (PLASTEC)
Copies available from DDC;
public sale through CFSTI.
Qualified organizations
write to PLASTEC.

AD Accession No.
Plastics Technical Evaluation Center (PLASTEC) Picatinny Arsenal,
Dover, New Jersey 07801

COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II)
(An Addendum to Picatinny Arsenal Technical Report 2595)
by Norman E. Beach and Vincent K. Canfield

PLASTEC Report 33, April 1968 78pp.
Unclassified Report

A roundup of data on the compatibility of explosives with polymers was made by Miss Marjorie St. Cyr in the years immediately prior to 1959. This work was reported as Picatinny Arsenal Technical Report 2595, dated March 1959.

The work herein reported covers the explosives/plastic compatibility data from 1959 through 1967. The effort has been to include all available hard data from the United Kingdom, Canada, Australia and these United States.

The present study is given a simplified form: in alphabetical order (first) by trade name or generic name of the plastic and (second) by explosive. By this means the reader can tell (first) what explosives a plastic is compatible with, and (second) what plastics can be used safely with a particular explosive.

For this report, the search was stretched to include adhesives and elastomers.

UNCLASSIFIED

Plastics - Compatibility
Polymers - Compatibility
Elastomers - Compatibility
Adhesives - Compatibility
Propellants - Solid
Explosives
Compatibility

I. Beach, N. E., Canfield, V. K.
II. Title

UNTERMS

Plastics
Polymers
Elastomers
Adhesives
Propellants
Explosives
Compatibility

DISTRIBUTION

Through FOIR (PLASTEC)
Copies available from DDC;
public sale through CFSTI.
Qualified organizations
write to PLASTEC.

AD Accession No.
Plastics Technical Evaluation Center (PLASTEC) Picatinny Arsenal,
Dover, New Jersey 07801

COMPATIBILITY OF EXPLOSIVES WITH POLYMERS (II)
(An Addendum to Picatinny Arsenal Technical Report 2595)
by Norman E. Beach and Vincent K. Canfield

PLASTEC Report 33, April 1968 78pp.
Unclassified Report

A roundup of data on the compatibility of explosives with polymers was made by Miss Marjorie St. Cyr in the years immediately prior to 1959. This work was reported as Picatinny Arsenal Technical Report 2595, dated March 1959.

The work herein reported covers the explosives/plastic compatibility data from 1959 through 1967. The effort has been to include all available hard data from the United Kingdom, Canada, Australia and these United States.

The present study is given a simplified form: in alphabetical order (first) by trade name or generic name of the plastic and (second) by explosive. By this means the reader can tell (first) what explosives a plastic is compatible with, and (second) what plastics can be used safely with a particular explosive.

For this report, the search was stretched to include adhesives and elastomers.

UNCLASSIFIED

Plastics - Compatibility
Polymers - Compatibility
Elastomers - Compatibility
Adhesives - Compatibility
Propellants - Solid
Explosives
Compatibility

I. Beach, N. E., Canfield, V. K.
II. Title

UNTERMS

Plastics
Polymers
Elastomers
Adhesives
Propellants
Explosives
Compatibility

DISTRIBUTION

Through FOIR (PLASTEC)
Copies available from DDC;
public sale through CFSTI.
Qualified organizations
write to PLASTEC.

.....CONTINUED FROM FRONT

<u>Rpt</u>	<u>Identification</u>	
28	Polybenzimidazoles: A Review, by J. R. Hall and D. W. Levi, July 1966	AD 637 569
29	Encapsulation of Electronic Parts in Plastics, A Review, by A. E. Molzon, February 1967	AD 648 420
30	Effect of Low Temperature (0 to -65°F) on the Properties of Plastics, by Joan B. Titus, July 1967	AD 661 633
31	Subject Index, Bibliography, and Code Description of Technical Papers on Plastics: 10 March 1966 - 18 May 1967, by Joan B. Titus and A. E. Molzon.	AD 660 954
32	Weatherability of Polyolefins, by Joan B. Titus, March 1968	
<u>Note</u>		
1	The Application of Nondestructive Testing to Plastics, by A. M. Anzalone, July 1961	AD 261 550
2	Indexed References Pertaining to Degradation and Fracture of Plastics, by A. E. Molzon, Aug 1961	AD 268 266
3	Defense Specifications and Standards for and Relating to Reinforced Plastics, by N. E. Beach, March 1963	AD 402 225
4	Plastics in the Medical Industry: A Cross-Indexed Bibliography, by A. E. Molzon, March 1962	AD 275 832
5	Health Hazards and Toxicity of Plastics: A Cross-Indexed Bibliography, by A. E. Molzon, March 1962	AD 276 001
6A	Govt. Specifications and Standards for Plastics, Covering Defense Engineering Materials and Applications (Revised), by N. E. Beach, July 1966	AD 640 377
7	Literature Survey on Thermal Degradation, Thermal Oxidation and Thermal Analysis of High Polymers, by D. W. Levi, June 1963	AD 423 546
8	Filament Winding in Military Applications, A Discussion of Problems Associated with Filament Wound Motor Cases, by A. M. Shibley, Sept 1963	AD 425 147
9	Trade Designations of Plastics and Related Materials, by Joan B. Titus and N. E. Beach, Dec 1965	AD 481 788
10	Literature Survey on Thermal Degradation, Thermal Oxidation, and Thermal Analysis of High Polymers. II, by Dorothy A. Teetsel and D. W. Levi, Jan 1966	AD 631 655
11	Crosslinking, Thermal and Mechanical Properties of Thermoplastic and Phenolic Resin Systems; A Bibliography, by D. W. Levi, Feb 1966	AD 634 234
12	Dielectric Properties of Polymers. A Bibliography, by D. W. Levi and Dorothy A. Teetsel, May 1966	AD 635 799
13*	Plastics in Government: A Reprinting of Four Conference Papers, 1966 Annual Conference, SPI, Moderator - H. E. Peibly, Jr., July 1966	AD 642 299
14	Glossary of Plastics Terms; A Consensus, by N. E. Beach, Dec 1966	AD 645 208
15	Ferrocene Polymers: An Annotated Bibliography, by D. W. Levi, Sept 1966	AD 643 025
16	Military Application of Plastics and Related Materials, by Arthur H. Landrock and Nicholas T. Baldanza, May 1967	AD 653 837
17	Guide to Test Methods for Plastics and Related Materials, by Norman E. Beach, August 1967	AD 662 049
18	The Coating of Aluminum with Plastics by the Fluidized-Bed and Electrostatic Powder Techniques by A. H. Landrock, February 1968.	AD 666 224
19	Polymer Synthesis; a Survey of Government Contracts Since 1960, by Arnold E. Malzon, January 1968	AD 666 758

*Not on public sale

