

1969

LEAD RESEARCH AND DEVELOPMENT

SUMMARY

OF

AUTHORIZATION AND BUDGET

	<u>AUTHORIZATION</u>	<u>ESTIMATED BUDGET</u>
I Chemical Innovations	\$ 73,200	\$ 74,700
II Architectural	108,194	96,944
III Lead Shot	URA As Required	URA As Required
IV Cable Sheathing	74,000	74,000
V Batteries	67,500	84,000
VI Paints & Pigments	32,000	35,250
VII Corrosion Protection	10,000	13,000
VIII Fellowships	32,030	44,570
IX Environmental Health	266,361*	228,138
X Abstracting	10,000	10,000
XI Undesignated Research Authorization	50,000	----
	<u>\$ 723,285</u>	<u>\$ 660,602</u>

* Includes \$25,000 Special Undesignated Research Authorization

N 3861

(3)

LEAD RESEARCH

AUTHORIZATION & BUDGET

NOTES

ICI CHEMICAL INNOVATIONS

A. ORGANOLEAD APPLICATIONS

154	Organoleads for Tropical Disease Control
49	Organolead Lubricant Additives
89	Lead Compounds As Wood Impregnants Against Marine Borers

B. ORGANOLEAD SYNTHESIS

18 Organolead Chemistry
28 Synthesis of Organolead Compounds

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LC 133	Evaluation of Organolead Polymers	(1)
LC 146	Organolead Polymers for Optical Use	(1)

WATKINS

(1) Terminated during year

NOVEMBER 9, 1967

II. ARCHITECTURAL

A. PRODUCTS

- LM 77 Lightweight Lead Sheet Roofing System -
 LM 147 Lead Curtain Walls (2)
 LM 122 Lead-Plastic Composites for Packaging
 and Barrier Applications (3)
 URA 2,000 }

B. METHODS & PROCEDURES

- LM 121 Reinforced Lead Applications (4)
 LM 149 Particulate Lead Sheet -
 LM 123 Adhesive Lead Cladding (2)

C. FINISHES

- LE 100 Protective and Decorative Finishes
 for Lead -

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

- LM 8 Lead Powder Metallurgy (5)
 LM 58 Plumbing Applications of Lead (6)

TOTAL ARCHITECTURAL

- (2) Deferred
 (3) Authorized and Initiated in 1967, \$11,000
 (4) Authorized and Initiated in 1967, \$10,000
 (5) Authorized and Initiated in 1967, \$12,453
 (6) Authorized and Initiated in 1967, \$7,500

1969 EXPENDITURES REMAINING ON	1969 PROJECTS			1969 AUTHORIZATION	EXPENDITURES		CONTINUING ANTICIPATED
	1968 OR PRIOR AUTHORIZATION	1969 REMAINING EXPENDITURES IN	1969 IN		1970 IN		
			(1)			(2)	
26,750	-	-	28,694	28,694	-	-	At Reduced Level Yes
20,000	-	-	5,000	10,000	5,000	5,000	Yes
2,000 }	-	-	22,000	22,000	-	-	Yes
-	2,500	-	7,500	10,000	2,500	2,500	No
-	-	-	18,750	25,000	6,250	6,250	Yes
10,000	-	-	URA As Required				No
15,000	1,000	-	11,500	12,500	1,000	1,000	At Reduced Level
-	-	-	-	-	-	-	No
-	-	-	-	-	-	-	No
3,500	-	-	93,444	108,194	14,750	14,750	

III. LEAD SHOT

LM 145 Non-Toxic Lead Shot

IV. CABLE SHEATHING

LM 55 Lead Composite Cable Sheathing
LM 142 Extrusion of High Strength Lead
Cable Sheathing Alloys

TOTAL CABLE SHEATHING

V. BATTERIES

A. S. L. I.

LE 84 Pastes and Grids for the Lead-Acid
Battery
LE 128 Support of Battery Research at NRL

B. PROPULSION & PORTABLE

ULE 50 Lead-Air Battery
LE 143 Battery Powered Vehicle

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LE 130 Influence of Cast Structure on the
Electrochemical Corrosion of Lead Alloys (7)

TOTAL BATTERIES

(13) Not initiated, miscellaneous expenditures only. (2) Deferred
(7) Authorized and initiated in 1967, \$5,000

(14) It is the strong recommendation of the Lead Program Review Committee that the industry should be encouraged to move ahead toward the
production of an electric vehicle. No specific funds are recommended at present, but at an appropriate time substantial funding should
made available, possibly by special assessment, on an urgent basis to further this project at the maximum possible rate of effort

NOTES	1969 EXPENDITURES REMAINING ON		1969 PROJECTS		1970 PROJECT
	AUTHORIZED PROJECTS 1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	1969 AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	IN 1970 (5)
(13)	10,000	-	-	URA As Required	No
(2)	24,000	2,000	24,000	22,000	2,000
	10,000	-	50,000	50,000	-
		2,000	74,000	72,000	2,000
	35,000	3,000	35,000	32,000	3,000
	15,000	-	12,500	12,500	-
		-	20,000	15,000	5,000
	35,000 6,000	20,500	67,500	59,500	8,000
		-			
		1,000			
		24,500			

VI. PAINTS & PIGMENTS

- IC 81 Antifouling Paint Formulations
 IC 117 Lead Pigments in Paints

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

- IC 101 Flame Spraying of Low Temperature Lead Enamels
 IC 116 Handbook on Inorganic Lead Chemicals
 IC 144 Control of PbO Loss in Manufacturing Lead Glasses

TOTAL PAINTS & PIGMENTS

VII. CORROSION PROTECTION

- LE 113 Explosive Cladding of Lead to Steel
 IM 125 Hot Dip Lead Alloy Coating of Steel
 IM 148 Soldering Lead Coated Surfaces

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

- LE 36 High Speed Plating of Lead
 LE 65 Corrosion of Lead in Various Media (Handbook)

TOTAL CORROSION PROTECTION

- (7) Deferred
 (8) Authorized and initiated in 1967, \$29,500
 (9) Completing previously authorized project
 (10) Authorized and initiated in 1967, \$10,000
 (11) Authorized and initiated in 1967

NOTES

1969 EXPENDITURES REMAINING ON	1969 PROJECTS			1970 PROJECTS	
	1969		EXPENDITURES IN 1970 (5)	1970	
	AUTHORIZED 1968 OR PRIOR AUTHORIZATION (1)	1969 AUTHORIZATION (3)		1969 IN (4)	1970 IN (6)
	27,500	12,000	12,000	12,000	1,500
	20,000	20,000	18,500	18,500	-
	-	-	-	-	-
	-	-	-	-	-
	3,150	-	-	-	-
	-	-	-	-	-
	1,400	-	-	-	-
	5,000	-	-	-	-
	1,250	-	-	-	-
	4,750	32,000	30,500	1,500	-
	-	10,000	10,000	-	-
	-	-	-	-	-
	10,000	-	-	-	-
	-	-	-	-	-
	18,000	-	URA As Required	-	-
	-	-	-	-	-
	2,855	-	-	-	-
	3,000	10,000	10,000	-	-

NOVEMBER 4, 1966

NOTES

VIII. FELLOWSHIPS

LM 141	Industrial Applications of Lead (Art Center College Fellowship)	URA
LM 155	Cryogenic Properties of Lead and Lead Alloys	-
LC 134	Electrochemistry of Organolead Compounds	-
LC 137	Opacification of Leaded Porcelain Enamels	-
LC 139	Oriented High Lead Ferrites	-
LC 150	Photochemical Reactions of Lead Oxide	URA
LC 108	Study on Colored Lead Bearing Aluminum Porcelain Enamels	-

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LM 120	Sticking Probability of Oxygen on Lead Surfaces	-
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TOTAL FELLOWSHIPS

IX. ENVIRONMENTAL HEALTH

A. AIR POLLUTION

LH-75	Human Exposure to Particulate Lead Compounds in the Air Under Experi- mental Conditions	(12) URA
LH-151	Study of Atmospheric Concentrations in Animals and Man	(12)

(12) Co-sponsored by TEL Producers

1969 EXPENDITURES REMAINING ON AUTHORIZED PROJECTS	1969 PROJECTS			1970 PROJECTS
	1968 OR PRIOR AUTHORIZATION (1)	1969 AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	EXPENDITURES IN 1970 (5)
				CONTINUAT ANTICIPAT (6)
2,500	-	2,500	2,500	-
-	-	2,500	2,500	-
5,126	-	5,340	5,340	-
5,800	5,800	5,800	5,800	-
7,500	-	7,500	7,500	-
3,500	2,500	5,200	5,200	-
4,000	2,000	3,190	3,190	-
4,500	2,240	-	-	-
	12,540	32,030	32,030	-
37,500	14,125	58,000	43,500	14,500
19,000	-	34,385	34,385	-

NOVEMBER 1, 1968

	1969 EXPENDITURES REMAINING ON			1969 PROJECTS			1970 PROJECTS	CONTINUING ANTICIPATED
	AUTHORIZED PROJECTS			EXPENDITURES				
	1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	NOTES	1969 AUTHORIZATION (3)	IN 1969 (4)	IN 1970 (5)		
B. OCCUPATIONAL HEALTH								
LH 79A&B	-	-	Toxicity Testing for Organo-Lead Compounds	10,000	2,500	-	Yes	
C. PUBLIC HEALTH								
LH 94	52,853	-	Biol. Basis for Lead Intoxication	51,976	51,976	-	Yes	
LH 106	2,500	-	Kettering Lead Abstracts	2,500	2,500	-	Yes	
LH 138	-	-	Lead Release from P.V.C. Piping	10,000	5,000	5,000	No	
LH 115	35,000	17,352	Six Cities Survey	35,000	8,750	26,250	No	
LH 114	15,000	13,296	Neurophysiological Effects from Lead Exposure	20,000	5,000	15,000	No	
LH 109	2,728	-	Relationship between Lead in Motor Vehicle Exhaust and Consumer Crops	7,000	7,000	-	?	
ULH 15	20,000	10,254	Health Study of Lead Workers	12,500	12,500	-	Yes	
COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS								
LH 86	2,500	-	Lead Glazes for Dinnerware	-	-	-	No	
D. UNDESIGNATED RESEARCH AUTHORIZATION								
	25,000	-	(12)	25,000	As Required	-	Yes	
TOTAL ENVIRONMENTAL HEALTH				<u>266,361</u>	<u>173,111</u>	<u>60,750</u>		

(12) Co-sponsored by TEL Producers

NOVEMBER 1, 1968

	1969 EXPENDITURES REMAINING ON		1969 PROJECTS		1970 PROJECTS
	AUTHORIZED PROJECTS 1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	1969 AUTHORIZATION (3)	IN 1969 (4)	IN 1970 (5)
NOTES					
X. ABSTRACTING					
LP 52 Lead Abstracting Service	10,000	-	10,000	10,000	-
TOTAL ABSTRACTING	-	-	10,000	10,000	-
XI. UNDESIGNATED RESEARCH AUTHORIZATION					
TOTAL 1969 AUTHORIZATION	50,000	-	50,000	As Required	-
			723,285		
		117,317			
TOTAL 1969 ESTIMATED BUDGET				543,285	
PROJECTED EXPENDITURES INTO 1970				117,317	97,500
				660,602	