Monsanto Industrial Chemicals Company

Product Acceptability Practices

Paper No. 9 - THE DISPOSAL OF BY-PRODUCTS AND RESIDUES Date: November 1, 1974

D I S T R I B U T I O N

MANAGING DIRECTOR

DIVISION MANAGERS/BUSINESS MANAGERS

MARKETING DEPARTMENTS
Directors, Managers, Product Managers/Specialists, Supervisors and Field Salesmen.

MANUFACTURING DEPARTMENTS
Directors, Managers, Plant Managers, Production/PTS Superintendents, Chief Chemists

RESEARCH & DEVELOPMENT DEPARTMENTS
Directors, Managers, Group Leaders, Fellows

COMMERCIAL DEVELOPMENT DEPARTMENTS
Managers, Supervisors

PLANNING & CONTROL DEPARTMENTS
Directors, Managers

ENGINEERING DEPARTMENTS
Directors, Managers

DISTRIBUTION DEPARTMENT
Managers

PRODUCT ACCEPTABILITY DEPARTMENT
Managers

LAW DEPARTMENT
Director, Attorneys

ADMINISTRATION
Director, Director/Manager Marketing Services, Manager COP

TECHNOLOGY PLANNING & EVALUATION
Director, Managers, Group Leaders, Fellows, Senior Research Specialists

UTILITIES & ENVIRONMENT
Director

0066532

Monsanto Industrial Chemicals Company

Product Acceptability Practices

Paper No. 9 Date: November 1, 1974

SUBJECT: THE DISPOSAL OF BY-PRODUCTS AND RESIDUES

I. POLICY

MICC policy is to dispose of unavoidable by-products and residues in the most economical manner possible to Monsanto consistent with all legal requirements of federal, state and local government agencies and consistent with due care and concern for potential injury or damage to people, animals and the environment.

II. RESPONSIBILITIES

The business group responsible for the process that generates a by-product and/or residue is responsible for disposal of the by-product and/or residue. Each department of a business group (R&D, Commercial Development, Manufacturing, and Marketing) has the same responsibilities in the disposal of by-products and residues as it has in the development, manufacture, and sales of the desired product(s) of a given process. General Manager approval of a proposed program must be obtained by the business group.

All other Company and Corporate functions have the same review and approval responsibilities in the disposal of by-products and/or residues as they have in the development and sale of the desired product(s).

III. RATIONALE

We recognize and accept the knowledge of increasingly more stringent requirements of safety, toxicity, environmental compatibility, etc. for our products. An ideal process would not generate by-products or residues, but we have no ideal processes! By-product and residue problems have been handled without the benefit of any published guidelines that describe what is necessary before a plan of action is put into practice. The risks involved with by-product or residue disposal may be more serious than with the sale of product. It is necessary that we know a great deal about the possible customer, the use to which he intends to put our residue, how he plans to dispose of his residue, his financial resources, etc. if we are to avoid significant financial responsibility or adverse publicity for Monsanto.

Disposal of by-products and residues requires use of resources just as does the search for new products, development of processes, or applied

product research. Business groups are responsible for management of resources devoted to their products, and they also are responsible for providing the resources necessary to dispose of by-products and residues. Basically the rationale is that all facets of a manufacturing and marketing operation require whatever attention is needed to stay in business.

IV. PROCEDURE

The initiative for recommending action may be taken by any group having knowledge of the problem or opportunity involved in disposing of a by-product or residue. For example, in the case of existing processes it is likely that plant personnel will first recognize the need to dispose of by-products or residues. This need should be brought to the attention of the business group Manager, Manufacturing who will then involve other business group functions and initiate whatever activities are necessary to obtain General Manager approval of the disposal method recommended. A marketing man may recognize a sales opportunity for disposing of residues or by-product; in this case he should bring it to the business group Marketing Director who will involve other business group functions and initiate whatever activities are necessary for General Manager approval of the disposal method recommended.

The following table lists key activities necessary for arriving at a method for disposing of by-products and residues. Opposite each activity, the function responsible is indicated. No attempt is made in the table to indicate the position responsible within each function. For example, Manufacturing could include any one or several of these: Director, Manager, Plant Manager, Production Superintendent, PTS Superintendent, Chief Chemist. R&D could include: Director, Manager, Section Manager, Group Leader.

0066534

ACTIVITY	RESPONSIBLE								
	Business Group				MICC			Corporate	
	R&D	Comml. Dev.	Mfg.	Mktg.	Env. Protect.	Prod. Accept.	Law	Medical	Distr.
A. Select and recommend disposal method									
Provide data on quantities									
If new or purchased process	X								
If existing process			X						
Provide chemical composition data	X								
Evaluate alternates and recommend preferred choice to Business Director	X	X	X	X					
GENERAL MANAGER APPROVAL OF RECOMMENDATION IS REQUIRED BEFORE FOLLOWING ACTIVITIES ARE BEGUN									
B. If recommended disposal method requires movement out of generating plant									
1. Before sending samples outside Monsanto:									
a. Submit EC-201 Questionnaire to Medical (Exhibit I)	X								
b. Respond favorably to EC-201								X	
c. Provide data for Temporary Shipping Authorization (G-1979 Rev. 2/74) to Corporate Distribution (Exhibit II)	X							X	
d. Issue Temporary Shipping Authorization									X
e. Review and approve each of above					X	X			

0066535

ACTIVITY	RESPONSIBLE								
	Business Group				MICC			Corporate	
	R&D	Comml. Dev.	Mfg.	Mktg.	Env. Protect.	Prod. Accept.	Law	Medical	Distr.
2. Before Sale is made:									
a. Submit EC-202 Questionnaire to Medical (Exhibit III)	X								
b. Respond favorably to EC-202								X	
c. Provide information on physical and chemical properties	X								
Hazardous Property Data	X								
Toxicological Data								X	
Ecological Data	X								
Use		X		X					
d. Provide Material Safety Data Sheet (OSHA 20)	X					X		X	
e. Set Specifications (G-2598 or G-2599) (Exhibits IV & V)	X	X	X	X		X			
f. Provide information for label and Freight Classification Request (TF-837, Rev.7/74) (Exhibit VI)	X	X		X				X	
g. Provide DOT classification, labels, Shipping Instructions, etc. (TF-837, Rev.7/74) (Exhibit VI)									X
h. Prepare Sales Contract that recognizes customer's ability to handle material				X			X		

0066536

ACTIVITY	RESPONSIBLE								
	Business Group				MICC			Corporate	
	R&D	Comml. Dev.	Mfg.	Mktg.	Env. Protect.	Prod. Accept.	Law	Medical	Distr.
i. Review and approve each of above						X			
j. Obtain proper signatures on sales contract				X					
3. Before contracting for disposal									
Complete steps 2 a, b, c, f, g, above									
Prepare Contract			X		X		X		
Review and approve each of above					X				
Obtain proper signatures on contract			X						
C. If recommended disposal method is to handle inside generating plant									Eng.
Obtain process	X								
Engineer and design facilities needed			X						X
Prepare capital project			X						X
Review and approve above					X		X	X	
Obtain proper authorizations			X						

0066537

EXHIBIT I

Monsanto

MEDICAL DEPARTMENT BULLETIN

Data Sheet EC-201

NEW PRODUCTS

Preliminary Environmental Compatibility Assessment

The following Environmental Compatibility Assessment Scheme includes some procedures similar to those now used by the Medical Department to assess the potential hazard of new materials to humans. This systematic scheme is being adopted to ensure insofar as possible that our products are not hazardous to the public or the environment.

The scheme is designed to elicit the information needed to protect people who come in contact with large or small amounts of a material, occasionally or continually, and all aspects of the environment which may contact or accumulate it or its degradation products. It takes the form of a series of questions to be asked about the material which can be answered simply "yes" or "no". However, as will be obvious from consideration of the questions, considerable knowledge will be required to provide satisfactory answers.

As provided for in corporate procedures (D-II-8 in Management Guide), the division in the company responsible for a new product must obtain a preliminary environmental evaluation, as soon as the proposed product is identified and the end uses visualized.

To initiate this evaluation the individual responsible for the product consults the literature and obtains the best answers he can by consultation with others and completes data sheet EC-201. He sends this to the Medical Department along with a statement of his principal sources of information and a request for a preliminary environmental evaluation.

The Medical Director will respond as to the environmental problems foreseen and information required, if any, before sending out trial samples.

0066538

Environmental Compatability Assessment - Data Sheet EC-201 (cont.)

Description of the Product -

Probable End Uses -

A. Is the acute toxicity (via oral ingestion, skin absorption, inhalation) known or can it be estimated by analogy based on data for chemically related compounds? Indicate below:

	Known		Estimated
1) oral LD_{50}-rats	_____	or	_____ mg/kg
2) skin absorption MLD-rabbits	_____	or	_____ mg/kg
3) inhalation effect	_____	or	_____
4) skin irritation potential	_____	or	_____
5) eye irritation potential	_____	or	_____

B. Are harmful effects from repeated or chronic exposures known or can they be predicted by analogy?

C. Will 1) wastes from manufacturing
2) anticipated use, and/or
3) ultimate disposal of end product create environmental problems because product fails to readily degrade or decompose?

D. Is there an indication based on data or analogy, that the product can be stored or concentrated in biological systems?

E. Is it likely that harmful secondary reaction products will arise from a harmless-appearing parent as a result of chemical, biochemical, or biological activity in the environment?

NOTE: The Medical Department should be consulted for answers to Questions A and B. Questions C - E require speculation by people knowledgeable about the process and end use.

0066539

TEMPORARY SHIPPING AUTHORIZATION — FOR ALL MATERIALS NOT PREVIOUSLY CLASSIFIED DATE _____

ORIGINATOR OF THIS FORM MUST HAVE TECHNICAL KNOWLEDGE OF THE ITEM AND ACCESS TO TOXICITY DATA IN ORDER TO COMPLETE THIS FORM. INDICATING THE HAZARDS OF THE ITEM CONSIDERED FOR SHIPMENT. CERTIFICATE MUST BE SIGNED AT BOTTOM OF APPROPRIATE COLUMN BY ORIGINATOR.

CENTRAL DISTRIBUTION DEPARTMENT WILL REVIEW THE FORM, INSERT SHIPPING INSTRUCTIONS, AND RETURN THE ORIGINAL TO THE **ORIGINATOR** FOR RETENTION. THIS MUST BE PRESENTED TO THE SHIPPING ROOM FOR SHIPPING INSTRUCTIONS ON SUBSEQUENT SHIPMENTS UNTIL THIS ITEM IS PUBLISHED IN THE PRODUCTS SHIPPING CLASSIFICATION MANUAL.

IDENTIFICATION OF PRODUCT

SALES NAME _____

CHEMICAL NAME _____

_____

COMMON NAME _____

GAS _____ LIQUID _____ SOLID _____

QUANTITY _____

HEALTH HAZARDS	1 DANGEROUS	2 RESTRICTED
	IF ONE OR MORE HAZARDS IN THIS COLUMN IS CHECKED **YES,** SHIPMENT IS NOT AUTHORIZED WITHOUT SIGNED APPROVAL FROM ST. LOUIS. THE ORIGINATOR MUST MAIL THIS FORM TO ST. LOUIS G.O., **CENTRAL DISTRIBUTION DEPARTMENT, PACKAGING DEVELOPMENT SECTION (G4EC)** FOR SHIPPING INSTRUCTIONS.	THE SHIPPING ROOM WILL SHIP THIS ITEM PER THE APPROPRIATE PUBLISHED PACKAGING PROCEDURE, INCLUDING THE ADDITIONAL CLASSIFICATION (IN PARENTHESIS) TO THE NORMAL SHIPPING CLASSIFICATION FOR AIR SHIPMENTS. SELECTION OF APPROPRIATE PACKAGING AND CLASSIFICATION WILL BE DETERMINED BY THE HAZARD CHECK **YES** NEAREST THE BOTTOM OF THIS COLUMN. THE SHIPPING ROOM MUST THEN MAIL THIS FORM TO ST. LOUIS (SEE INSTRUCTIONS FOR DANGEROUS ITEMS). DO NOT MAIL ANY ITEM HAVING A HAZARD NOTED BY THIS COLUMN.
CAUSES SEVERE BURNS TO SKIN OR EYES	YES ☐ NO ☐	
POISON - HARMFUL OR FATAL BY SKIN CONTACT OR INHALATION	YES ☐ NO ☐ SPECIFY COMPARABLE PRODUCT ON BACK	
ORAL TOXICITY (RATS)	50 MG/KG OR LESS BY TEST ☐ YES ☐ ESTIMATED ☐ NO ☐	50MG/KG TO 500 MG/KG (ORA.A) BY TEST ☐ YES ☐ ESTIMATED ☐ NO ☐
EXTREMELY IRRITATING OR SICKENING ODOR		YES ☐ NO ☐ (ORA.A SHIP BY CARGO AIRCRAFT ONLY)
PHYSICAL HAZARDS		
FLASH POINT °F TAG. CLOSED CUP FLAMMABLE LIQUID COMBUSTIBLE LIQUID	FLASH POINT IS _____ °F LESS THAN 100°F YES ☐ NO ☐ 100°F TO 200°F YES ☐ NO ☐	
FLAMMABLE SOLID, BURNS READILY	YES ☐ NO ☐	
YIELDS OXYGEN TO STIMULATE COMBUSTION OF OTHER MATERIALS	YES ☐ NO ☐	
COMPRESSED GAS	YES ☐ NO ☐	
RADIOACTIVE	YES ☐ NO ☐	
EXPLOSIVE	YES ☐ NO ☐	
POLYMERIZABLE	YES ☐ NO ☐	
CAUSES DAMAGE TO ALUMINUM OR STEEL	YES ☐ NO ☐	
OTHER POTENTIAL HAZARDS	YES ☐ NO ☐ (SPECIFY ON REVERSE SIDE)	
	1 _____ SIGNATURE	**2** _____ SIGNATURE

3 NON-RESTRICTED

IF THE COLUMN IS SIGNED, THE SHIPPING ROOM WILL SHIP THE ITEM PER THE PUBLISHED PACKAGING PROCEDURE FOR NON-REGULATED ITEMS. THE WORDS "NOT RESTRICTED" WILL BE ADDED TO THE NORMAL SHIPPING CLASSIFICATION FOR AIR SHIPMENTS THIS FORM WILL BE MAILED TO ST. LOUIS FOR COMPLETION AND FINAL APPROVAL.

THE ITEM IDENTIFIED DOES NOT POSSESS ANY OF THE HAZARDS LISTED IN THE **DANGEROUS** OR **RESTRICTED** COLUMNS. NO OTHER POTENTIAL HAZARDS ARE CONNECTED WITH THIS ITEM.

3 _____ SIGNATURE

ORIGINATOR'S

LOCATION _____

DIV./DEPT. _____

STA. NO. _____

EXHIBIT 11

0066540

TO BE COMPLETED BY CENTRAL DISTRIBUTION DEPT.

DOT/CAB HAZARD CLASSIFICATION _____

DOT/CAB LABEL REQUIRED _____

PACKAGING REQUIREMENTS _____

AUTHORIZED SHIPPING MODES _____

APPROVED BY _____ DATE _____

G-1979 REV. 2/74

NOTE TO SHIPPING ROOM:

PRESENTATION OF THIS SIGNED FORM IS AUTHORIZATION TO MAKE FUTURE SHIPMENTS OF THIS ITEM IF COMPLIANCE WITH THE CENTRAL DISTRIBUTION DEPARTMENT SHIPPING INSTRUCTIONS IS EMPLOYED AND IF SIGNED APPROVAL IS INDICATED AT LEFT.

THIS AUTHORIZATION GOOD UNTIL _____ DATE

EXHIBIT III

Monsanto

MEDICAL DEPARTMENT BULLETIN

Data Sheet EC-202

NEW PRODUCTS

Final Environmental Compatibility Assessment

As provided for in corporate procedures (D-II-8 in Management Guide and Medical Department Bulletin EC-201) the division in the company responsible for a new product must obtain a final environmental evaluation before commercialization.

To obtain this evaluation, the individual responsible for the product reviews the Preliminary Environmental Compatibility Assessment (EC-201) form, consults the literature, obtains the best answers he can by consultation with others, and completes Data Sheet EC-202. He sends this to the Medical Director along with a statement of his principal sources of information, the intended product uses and a request for a final environmental evaluation with intent to commercialize.

The Medical Director will respond as to the environmental acceptability, restrictions, or additional information needed, if any, or if unacceptable, the reasons why.

0066541

Environmental Compatibility Assessment Scheme

Instructions:

Answer each question in turn, "yes" or "no". Each answer is provided with a directive concerning the question to be answered next; the logic of the scheme assumes that questions skipped would be answered "no" and can thus be ignored. The last question, No. 12, should be considered if it is decided to make and sell materials which are very useful but potentially dangerous to man or his environment. When applying this form, consideration must be given to the product Monsanto supplies, product impurities, as well as thefinal or end product that enters the environment.

ITEMS 1 THROUGH 3 ARE TO ESTABLISH THE HAZARDS TO HUMANS OF PRODUCTS, PRODUCT IMPURITIES, BY-PRODUCTS OR MANUFACTURING AND DEGRADATION PRODUCTS.

	If	Go to:
1. Is the material so physiologically inert that there need be no concern about health hazards to humans?	Yes	4
	No	2 & 3
2. a) Is the material toxic to persons as a result of a single contact with high concentrations?		
b) Is the material toxic to persons at lesser concentrations following repeated or prolonged exposure?		
c) Is the material likely to be carcinogenic, teratogenic or mutagenic?		
3. Recognizing the hazards to people, can procedures be devised for safe handling at reasonable cost?	Yes	4
	No	-Do Not Sell

ITEMS 4 THROUGH 6 ARE TO ESTABLISH IF CONSIDERATION HAS BEEN GIVEN TO DISPOSAL, DEGRADATION PRODUCTS OF DISPOSAL AND ENVIRONMENTAL DEGRADABILITY.

	If	Go to:
4. Can "closed-loop" disposal provisions be developed for the product so it will never reach the environment?	Yes	5
	No	6

0066542

		If	Go to:
5.	Is it likely the degradation products from the "closed-loop" disposal system could be harmful to humans?	Yes No	-Recycle Degradation Products to 2. Continue at 6. 7
6.	Is it likely that the product will degrade in the environment or in any of the currently used disposal systems?	Yes No	-Recycle Degradation Products to 1. Continue at 7. 7

ITEMS 7 THROUGH 10 ARE TO ESTABLISH HAZARDS OF PRODUCTS AND DEGRADATION PRODUCTS TO PLANTS, ANIMALS OR ECOSYSTEMS.

7.	Is it probable that the product or degradation products are harmful to plants and animals at concentrations to which they are likely to be exposed?	Yes No	8 9
8.	Recognizing the hazards to plants and animals, can procedures be devised at reasonable costs to render the material innocuous?	Yes No	9 -Do Not Sell
9.	Is it likely that harmful secondary reaction products could be formed from the harmless parent material as a result of a chemical, biochemical, or biological activity in the environment?	Yes No	-Recycle the By-product at 1 & 7. Continue at 10. 10
10.	Is there reason to suppose that the material could have deleterious effect on the ecosystem, e.g., through concentration in the food chain, antagonism, synergism, abiotic reactions, chelation or plain physical concentration even though the material was not directly toxic to the biota?	Yes No	-Recycle to 8. Continue at 11. 11
11.	Have procedures been devized to handle catastrophes in the production, storage, or transportation of the product?	Yes	-Sell
12.	Is it necessary to restrict sales to specific end uses?		

EXHIBIT IV

MONSANTO INDUSTRIAL CHEMICALS COMPANY

TENTATIVE

FINISHED PRODUCT SPECIFICATIONS

PRODUCT CODE	DEPT. OR JOB	PAGE _____ OF _____	
		APPROVALS – DATE	
SALES CODE		CHIEF CHEMIST	
ISSUE DATE	SUPERCEDES SPECS. DATED	MANUFACTURING SUPT.	
PRODUCT (Trade Name)	GRADE	MGR., MANUFACTURING	
PRODUCT (Chemical Name)		RESEARCH GROUP LEADER	
CHEMICAL FORMULA		MARKETING OR DEVELOPMENT PRODUCT MANAGER	
SAMPLE FOR ANALYSIS		MANAGER, PRODUCT ACCEPTABILITY	

Characteristics	LIMITS Reject	Manufacturing	Unrestricted Sales	Method Number

0066544

NOTE: This specification is the property of the Monsanto Company and is for internal use only. It may not be released without written approval by Division Product Acceptability.

G 2508 1/74

EXHIBIT V

MONSANTO INDUSTRIAL CHEMICALS COMPANY

FINISHED PRODUCT SPECIFICATION

PRODUCT CODE	DEPT. OR JOB	PAGE _____ OF _____	
SALES CODE		APPROVALS – DATE	
ISSUE DATE	SUPERCEDES SPECS. DATED	CHIEF CHEMIST	
PRODUCT *(Trade Name)*	GRADE	MANUFACTURING SUPT.	
PRODUCT *(Chemical Name)*		MGR., MANUFACTURING	
CHEMICAL FORMULA		RESEARCH GROUP LEADER	
SAMPLE FOR ANALYSIS		MARKETING OR DEVELOPMENT PRODUCT MANAGER	
		MANAGER, PRODUCT ACCEPTABILITY	

Characteristics	LIMITS			Method Number
	Reject	Manufacturing	Unrestricted Sales	

0066545

NOTE: This specification is the property of the Monsanto Company and is for internal use only. It may not be released without written approval by Division Product Acceptability.

G-2599 1/74

Monsanto

LABEL AND FREIGHT CLASSIFICATION REQUEST

Initiated by (Individual's name)	Date Initiated	Docket Number

Company	Division or Department	Date Completed

1. IDENTIFICATION OF PRODUCT – To be filled in by Chemist. Signature _____ Product Code _____

1.1 Sales Name

1.2 Chemical Name

Research number:

Previous Monsanto names and numbers used.
Development names:
Other trade names:

1.3 Common Names

2. STRUCTURAL FORMULA AND COMPOSITION – To be filled in by Chemist. Signature _____

Include impurities in statement of composition for mixtures, give percentage composition and structural formulas of principal components. For solutions, give percentage solids and composition of solvent and solids, separately, each on basis of 100. Where applicable, give percentage of residual intermediates or starting materials, and unneutralized acid or alkali. Do not use sales names; identify substances by chemical name.

3. PHYSICAL PROPERTIES – To be filled in by Chemist. Signature _____

3.1 Appearance: Describe as powder, crystal, flake, granule, lump, paste, volatile solid, viscous liquid, mobile liquid, volatile liquid, compressed gas, self pressurized container, etc.

3.2 Melting/Freezing Pt. _____ °C

Freeze-Thaw Stable Yes ☐ No ☐

3.3 Boiling Point: _____ °C

3.4 Vapor Pressure _____ psia at 100 °F

3.5 Solubility in water: _____ g/100 ml

Solubility of water in: _____ g/100 ml

Completely miscible ☐ Immiscible ☐

3.6 Flash Point. (For liquids and contents of self-pressurized containers):
Tag Closed Cup _____ °F
Pensky-Martens
Closed Tester _____ °F

3.7 Viscosity _____ CPS @ 25 °C

3.8 Specific Gravity _____

3.9 Coef. of Expansion _____

Odor (Describe): _____

4. PHYSICAL HAZARDS: REACTIVITY (Including but not limited to the following) – To be filled in by Chemist. Signature _____

4.1 Is product a strong oxidizing agent or strong reducing agent?
Yes ☐ No ☐

4.2 Is contact of product with combustible material liable to cause fire?
Yes ☐ No ☐

4.3 Is product corrosive to inanimate surfaces?
Yes ☐ No ☐
Fe _____ Al _____ (mpy)

4.4 Are there specific measures to be taken in handling, storage or use to assure safety?
Yes ☐ No ☐

4.5 Are there specific incompatibles with any other material insofar as safety is concerned? Yes ☐ No ☐

4.6 If answer to one or more of the above is "Yes," explain here and give preventive measures:

5. PHYSICAL HAZARDS: FLAMMABILITY – To be filled in by Chemist: Signature _____

5.1 Ignition Temperature (Solids): Will product ignite and burn at an ambient temperature of 80°F. or less when subjected to friction, or to percussion, or to an electrical spark?
Yes ☐ No ☐

5.2 Flame Propagation Rate (Solids): Will product ignite and burn with a self-sustained flame at a rate greater than 1/10 inch per second along its major axis?
Yes ☐ No ☐

5.3 Flame Projection (Contents of self-pressurized containers): Is a "flashback" (a flame extending back to the container) obtained at any degree of valve opening, or a flame projection exceeding 18 inches at full valve opening, when container is discharged at a flame from a distance of 6 inches?
Yes ☐ No ☐

5.4 (Solids): Will the product liberate vapor susceptible to ignition by spark or open flame at or below 300°F
Yes ☐ No ☐

6. PHYSICAL HAZARDS: GENERATION OF PRESSURE – To be filled in by Chemist. Signature _____

6.1 Will product explode when subjected to an electrical spark, or to percussion, or to flame?
Yes ☐ No ☐

6.2 Is product liable to formation of explosive peroxides or other explosive decomposition products?
Yes ☐ No ☐

6.3 Will product expel the closure of its container, or burn its container, when held at or below 130°F. for 2 days or less?
Yes ☐ No ☐

6.4 Will product erupt from its opened container at a temperature of 130°F. or less, after having been held in the closed container at 130°F. for 2 days?
Yes ☐ No ☐

6.5 Will product generate heat or pressure within its container through decomposition, spontaneous polymerization, exposure to light, heat, atmospheric moisture, or other means?
Yes ☐ No ☐

6.6 If answer to 6.5 is "Yes," explain here and give preventive measures:

6.7 Fire Extinguishing – Is water ineffective or dangerous?
Yes ☐ No ☐

If answer to 6.7 is "Yes," recommend an alternate generally available extinguishing agent.

0066546

Product Sales Name _____

7. HEALTH HAZARDS: HUMAN EXPERIENCE ONLY. – To be filled in by Chemist. Signature _____

To your knowledge, has skin or eye irritation or irritation or toxicity of any kind, been observed in research or manufacturing personnel exposed to this product, or in persons engaged in the transportation or use of this product? If so describe below. Check facts carefully. Do not repeat rumor or heresay:

(If more space needed, attach separate sheet.)

8. USES – To be filled in by Sales or Development. Signature _____

8.1 Will label or advertising make any claim for control of plants, animals, or micro-organisms?
Yes ☐ No ☐

8.2 Is product intended for use as an additive to food for humans or animals? Yes ☐ No ☐

8.3 Is product intended for use as a component of container or equipment in contact with food? Yes ☐ No ☐

8.4 Is product intended for use as a drug or a component of a drug for humans or animals? Yes ☐ No ☐

8.5 Is product intended for use as a cosmetic or a component of a cosmetic? Yes ☐ No ☐

8.6 Fertilizer Yes ☐ No ☐

8.7 Is product to be packaged in a container intended or suitable for household use? Yes ☐ No ☐

9. PRESENT OR INTENDED USE – To be filled in by Marketing Group. Signature _____

Primary Use

Secondary Uses

Competition Products

For resale products give precautionary statements and storage or handling instructions, if any, used on label by supplier.

Where produced by Monsanto

Value per pound or gallon $

Points of competitive manufacture

10. HEALTH HAZARDS: ANIMAL TEST RESULTS. – To be filled in by Medical Department. Signature _____

10.1 Oral Toxicity: Albino rats: Single oral dose.
LD50 _____

10.2 Skin Toxicity, Albino rabbits: LD50 by single 24 hour continuous skin contact. _____

10.3 Inhalation Toxicity, Albino rats 6 hour continuous inhalation of 25°C saturated atmosphere. _____

10.4 Skin Irritation, Albino rabbits: Primary irritation score

10.5 Eye Irritation: Albino rabbits:
Score _____
Classification _____

10.6 Corrosiveness: Albino rabbits: Is tissue at sight of contact destroyed?
Eyes Yes ☐ No ☐
Skin, 24 hr. contact Yes ☐ No ☐
Skin, 4 hr. DOT Yes ☐ No ☐

10.7 Source of preceding information.

10.8 Any unique hazards, not apparent from shown data.

11. DEPARTMENT OF TRANSPORTATION CLASSIFICATION – To be filled in by Distribution Department. Signature _____

Explosive:	Poison:				
Class A ☐	Class A ☐	Flammable Gas ☐	Oxidizing Material ☐	Compressed Gas ☐	Other
B ☐	B ☐	Flammable Liquid ☐	Combustible Liquid ☐	Radioactive ☐	(Please
C ☐	C ☐	Flammable Solid ☐	Corrosive Material ☐	Etiologic Agent ☐	State)

12. LABELS REQUIRED. Signature _____, Hazard Info. No. (DOT) (Chemtrec), _____

DOT Label _____ Special Marking _____ Monsanto Label _____

13. SHIPPING INSTRUCTIONS. Signature _____

Mailable Yes ☐ No ☐

Max. by express _____ Max. by passenger aircraft _____ Max. by cargo aircraft _____

14. **PROPER SHIPPING NAME,** **HAZARD CLASSIFICATION,** **SHIPPING DESCRIPTION.**

Signature _____

Rail _____

Truck _____

Water _____

Air _____

0066547