



Connecticut Department of
Environmental Protection

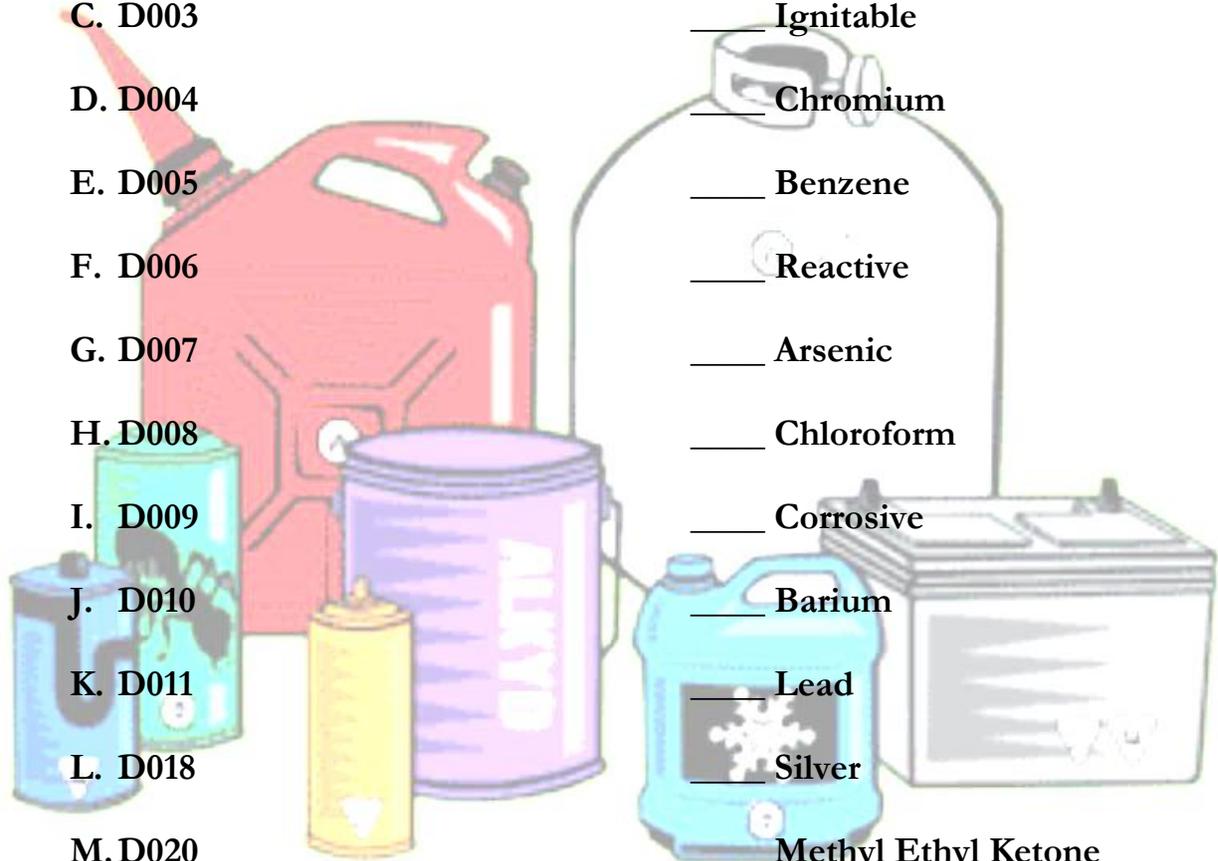
79 Elm Street
Hartford, CT

A Road Map to RCRA:
Small Quantity Generator
(SQG)
Student Workbook

Hazardous Waste Determination Student Workbook Activity # 1

Directions: Match the characteristic waste code listed in column 1 with the appropriate description listed in column 2.

<u>Column 1</u>	<u>Column 2</u>
A. D001	___ Selenium
B. D002	___ Chlordane
C. D003	___ Ignitable
D. D004	___ Chromium
E. D005	___ Benzene
F. D006	___ Reactive
G. D007	___ Arsenic
H. D008	___ Chloroform
I. D009	___ Corrosive
J. D010	___ Barium
K. D011	___ Lead
L. D018	___ Silver
M. D020	___ Methyl Ethyl Ketone
N. D022	___ Mercury
O. D035	___ Silver



Hazardous Waste Determination Student Workbook Activity # 2

Directions: Apply the appropriate F-Listed waste code(s) provided in the parking lot to the process descriptions listed below.

1. Used paint thinner that contained the following chemicals and concentrations prior to use:

- a. 30% Methylene Chloride
 - b. 30% Xylene
 - c. 30% Isobutanol
 - d. 10% Non-Regulated Material
-

2. Spent parts washing solution from a degreaser that contained the following chemicals and concentrations prior to use:

- a. 30% Carbon Tetrachloride
 - b. 20% Acetone
 - c. 20% Toluene
 - d. 30% Non-Regulated Material
-



Generator Status Student Workbook Activity # 3

Directions: Review the tables below for Generators 1, 2, and 3. Based on the information provided, determine the appropriate Generator classification for Generators 1, 2, and 3 (CESQG, SQG, or LQG).

Generator 1

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	0	1	0	0	0	1	0	0	1	0	0
Not Acute (lbs)	20	40	40	40	30	30	20	20	30	40	40	20
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	0	1	0	0	0	1	1	0	1	1	1
Not Acute (lbs)	20	60	100	40	70	100	120	140	30	70	110	130

Generator 1 Generator Classification: _____

Generator 2

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	1	1	0	0	1	0	1	0	1	0	0
Not Acute (lbs)	200	400	400	800	800	900	200	200	300	400	400	200
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	1	2	0	0	1	0	1	1	1	1	1
Not Acute (lbs)	200	600	1000	800	1600	2500	200	400	700	400	800	1000

Generator 2 Generator Classification: _____

Generator 3

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Generation Rates												
Acute (lbs)	0	0	2	0	2	1	1	1	1	0	1	2
Not Acute (lbs)	20	40	40	40	30	30	20	20	30	40	40	20
Accumulation Quantities (All Waste Shipped Off-Site at Each Highlighted Month)												
Acute (lbs)	0	0	2	0	2	3	1	2	3	0	1	2
Not Acute (lbs)	20	60	100	40	70	100	20	40	70	40	80	100

Generator 3 Generator Classification: _____

Container Accumulation and Storage

Student Workbook Activity # 4

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for a 55-gallon drum of waste being accumulated in a Satellite Accumulation Area.

HAZARDOUS WASTE	
STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY	
GENERATOR NAME _____	24 HR. PHONE () _____
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
EPA ID NO. _____	MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____	ACCUMULATION START DATE / / _____
CONTENTS, COMPOSITION _____	
PROPER DOT SHIPPING NAME _____	
TECHNICAL NAME (S) _____	
UNNA NO. WITH PREFIX _____	
HANDLE WITH CARE!	
CONTAINS HAZARDOUS OR TOXIC WASTES	

I am filling this drum with various flammable liquids from my histology lab. The contents include the following:

- Acetone
- Xylene
- Isopropyl Alcohol



Container Accumulation and Storage

Student Workbook Activity # 5

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for a 55-gallon drum of waste which is being moved from Satellite Accumulation to the Main Accumulation Area. Take into consideration that the drum was filled today.

HAZARDOUS WASTE	
STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY	
GENERATOR NAME _____	24 HR. PHONE () _____
ADDRESS _____	CITY _____ STATE _____ ZIP _____
EPA ID NO. _____	MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____	ACCUMULATION START DATE / / _____
CONTENTS, COMPOSITION _____	
PROPER DOT SHIPPING NAME _____	
TECHNICAL NAME (S) _____	
UNNA NO. WITH PREFIX _____	
HANDLE WITH CARE!	
CONTAINS HAZARDOUS OR TOXIC WASTES	

My waste drum is now full of various flammable liquids from my histology lab. The contents include the following:

- Acetone
- Xylene
- Isopropyl Alcohol



Tank Accumulation and Storage

Student Workbook Activity # 6

Directions: Use the information provided by the Generator to complete the Hazardous Waste Marking provided below for an above ground tank of waste which is accumulating hazardous waste at a facility. The first drop of waste was added to the tank yesterday.

HAZARDOUS WASTE	
STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY	
GENERATOR NAME _____	24 HR. PHONE () _____
ADDRESS _____	
CITY _____	STATE _____ ZIP _____
EPA ID NO. _____	MANIFEST DOCUMENT NO. _____
EPA WASTE NO. _____	ACCUMULATION START DATE / / _____
CONTENTS, COMPOSITION _____	
PROPER DOT SHIPPING NAME _____	
TECHNICAL NAME (S) _____	
UNNA NO. WITH PREFIX _____	
HANDLE WITH CARE!	
CONTAINS HAZARDOUS OR TOXIC WASTES	

I am used to store spent acid etch with a pH less than 2 which contains the following materials:

- Sulfuric Acid
- Iron
- Water



Pre-Transport Functions Student Workbook Activity # 7

Directions: Use the information provided to complete the Hazardous Waste Marking provided below for a container of waste which is being shipped off site today. Take into consideration that the waste generated one week ago.

HAZARDOUS WASTE

STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR NAME _____

ADDRESS _____ 24 HR. PHONE () _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ MANIFEST DOCUMENT NO. _____

EPA WASTE NO. _____ ACCUMULATION START DATE _____ / /

CONTENTS, COMPOSITION _____

PROPER DOT SHIPPING NAME _____

TECHNICAL NAME (S) _____

UNNA NO. WITH PREFIX _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

Generator Information
Mr. Smith's Chemical Co., Inc. 700 Waste Way Manchester, CT 06040 EPA ID#: CTD000100010
Material Information
DOT Shipping Description: UN1993, RQ, Waste, Flammable Liquids, n.o.s., (Aceton, Xylene), 3, II (D001)

Uniform Hazardous Waste Manifest Student Workbook Activity # 8

Directions: Review the Uniform Hazardous Waste Manifest below and identify the required sections that are missing information. Take into consideration that the primary Transporter just left the Generator site.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CTD000000111	2. Page 1 of 2	3. Emergency Response Phone	4. Manifest Tracking Number 110410781WVX		
5. Generator's Name and Mailing Address Company C Co., Inc. 117 Smith Lane W. Town, CT 06000 Generator's Phone:				Generator's Site Address (if different than mailing address)			
6. Transporter 1 Company Name John T. Smith Trucking Company				U.S. EPA ID Number CTD016100010			
7. Transporter 2 Company Name				U.S. EPA ID Number			
8. Designated Facility Name and Site Address Bill's Waste Services 71 Roger Road E. Town, CT 06002 Facility's Phone:				U.S. EPA ID Number			
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
		No.	Type				
RQ	1. UN1993, Waste Flammable liquids N.O.S. (Acetone, Methanol), 3, II (D001)	1	DM	650	P	D001	F003
X	2. UN2031, Waste, Nitric Acid, 8, II	2	DF	100	P	D002	
RQ	3. UN2809, Mercury, 1, III	1	DF	50	P		
	4. UN1950, Waste, Aerosols, Flammable, N.O.S., 2.1	1	DF	20	P	D001	
14. Special Handling Instructions and Additional Information 9b.1 1x55 gallon, ERG #128 9b.3 1x5 gallon, ERG #172 9b.2 2x5 gallon, ERG #157 9b.4 1x5 gallon, ERG #126							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name John Doe				Signature		Month Day Year	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Bill Johnson				Signature		Month Day Year	
Transporter 2 Printed/Typed Name				Signature		Month Day Year 8 3 08	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number _____							
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. _____		2. _____		3. _____		4. _____	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name				Signature		Month Day Year	

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Emergency Preparedness and Planning

Student Workbook Activity # 9

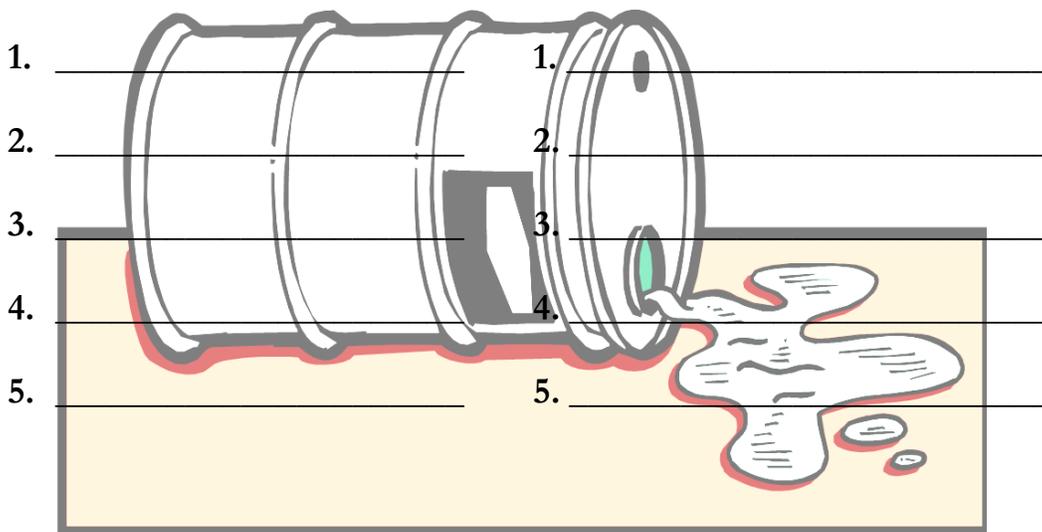
Directions: Read through the spill scenario below and fill in the blanks with facility/company specific information. Once you have read through the scenario complete Column 1 – Emergency Procedures with the first 5 steps that should be taken to respond to the scenario. Then complete Column 2 – Emergency Prevention with a list of tasks that should be taken to prevent this issue from occurring again.

A 55-gallon drum of _____ waste in one of your Satellite Accumulation areas is full. This drum needs to be moved from the Satellite Accumulation area to the 180-day Main Accumulation Area. To complete this task, the employee responsible for generating this waste, removes the filling funnel and replaces the larger application bung. Unfortunately, the employee does not have access to a bung wrench and only hand tightens the bung. This employee then adds the accumulation start date to the Hazardous Waste Marking and asks one of the facilities trained fork lift operators to move the drum to the Main Accumulation Area.

The fork lift operator lines up the barrel grabber with the outside edges of the drum, inches forward, and snugly tightens the barrel grabber to the 55-gallon drum. As soon as the operator attempts to lift the 55-gallon drum, the larger application bung pops out of place, _____ waste burps out of the drum, and the bung falls to the floor.

Column 1 – Emergency Procedures

Column 2 – Emergency Prevention



Inspections and Maintenance Student Workbook Activity # 10

Directions: Identify and discuss the specific issues with each of the pictures/diagrams below. Use the Small Quantity Generator (SQG) Container Storage Area Inspection form on the next page as a reference to assist with this activity.



Emergency Telephone
in a Container Storage
Area



Waste Container in a
Satellite Accumulation
Area



Waste Containers in a
Container Storage
Area

Instructions: Please use ink. Results of weekly inspections of hazardous waste containers and container storage areas must be recorded in this log. If any deficiencies are found, a description of the deficiencies must be recorded in the "Observation" column. Prompt and immediate action must be taken to correct any deficiencies observed. The date and nature of all corrective actions must be recorded in the "Corrective Actions Column". Once this log is completed, it should be maintained in a binder and must be kept on file for at least three years from the date of inspection. These inspection logs must be made available for inspection by State DEP inspectors.

Date of Inspection: _____ Time of Inspection: _____ a.m./p.m.

Full Name of Inspector: _____

Item/Condition to be checked	Yes	No	Observation/Deficiency	Corrective Actions and Date
Are all containers closed?				
Are all containers in GOOD condition (NOT leaking, rusted, bulging or otherwise in poor condition)?				
Are all containers marked?				
Does the marking include the words "Hazardous Waste" and other words to describe the waste?				
Are all markings legible and visible for inspection?				
Are all containers marked with accumulation start dates?				
Are dates less than 180 days?				
Is the amount of waste on site less than 1,000 kg (2,200 lbs)?				
Is there adequate aisle spacing?				
Are the containers stored on an impermeable base that is bermed?				
Are the base and berm free of gaps, cracks, and damage?				
Is the base free of spills, leaks, or other accumulation?				
Are incompatible materials separated by a wall or a berm?				

Note: If the "NO" column is checked, corrective action must be taken and the "Observation" and "Corrective Action" columns must be completed.

Additional Comments:

Universal Waste Student Workbook Activity # 11

Directions: Identify which of the following listed materials are recognized as Universal Waste in the State of Connecticut by placing an “X” in the space provided.

- ___ 4-Foot Fluorescent Lamps
- ___ Lead Acid Car Battery
- ___ Asbestos Tiles
- ___ Mercury Thermostat
- ___ Nickel Cadmium Rechargeable Battery
- ___ Spent Flammable Solvent Blend
- ___ Used Aerosol Can
- ___ Computer Monitor
- ___ Compact Fluorescent Bulb
- ___ Office Paper
- ___ Used Motor Oil
- ___ Lithium Battery
- ___ LCD Projector
- ___ Computer Terminal
- ___ Alkaline Battery

UNIVERSAL WASTE	
CONTENTS	_____
ACCUMULATION START DATE	_____
SHIPPER	_____
ADDRESS	_____
CITY, STATE, ZIP	_____



Universal Waste Student Workbook Activity # 12

Directions: Complete the Universal Waste Marking below with the required information for Fluorescent Lamps stored at your facility. The containers were filled today by one of your employee's who was asked to replace all of your burnt out bulbs.

**UNIVERSAL
WASTE**

CONTENTS _____

ACCUMULATION START DATE _____

SHIPPER _____

ADDRESS _____

CITY, STATE, ZIP _____

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Used Oil Student Workbook Activity # 13

Directions: Review the two descriptions below and determine whether or not the contents of the containers are considered Used Oil. For each of the containers that do not qualify as Used Oil, describe why and identify potential corrective actions in the space provided.

1. A 55-gallon drum was generated through vehicle maintenance activities. This drum is filled with equal concentrations of gasoline, engine coolant (water and ethylene glycol mixture), and used motor oil. Do the contents of this container meet the definition of Used Oil?

- Yes**
- No**

If you selected no, describe why not and identify potential corrective actions in the space provided below:

2. A 5-gallon pail of lubricating oil was generated by a company when they switched out an oil filter from a machine which uses petroleum based oil as a lubricant. This oil has a flashpoint of 430°F; contains no metals, halogens, or Polychlorinated Halogens (PCBs); and has a neutral pH. Do the contents of this container meet the definition of Used Oil?

- Yes**
- No**

If you selected no, describe why not and identify potential corrective actions in the space provided below:

Closure Requirements Student Workbook Activity # 14

Directions: The table below provides a list of waste which was stored in a former main accumulation area. The first column of the table provides the name of the material as well as a brief description as to how the chemical was used at the facility. The second column provides the corresponding waste code(s) that were applied to the specific waste stream. The third column of the table asks you to place an “X” in the space provided if you feel that the specific chemical meets the definition of a Constituent of Concerns (COC). Identify the materials on the table which meet the definition of a COC then provide comment in the discussion section (below the table) as to how you would test for its presence within the accumulation area.

Waste Stream & Description of Use	Applicable Waste Codes	COC
Flammable Solvents – 55-gallon drum which was used to accumulate spent non-halogenated solvents used throughout the facility. The specific solvents used include the following: Toluene, Isopropyl Alcohol, and Methanol.	D001, F003, F005	
Used Oil – 55-gallon drum which was used to accumulate used petroleum based lubricating oil from various machines throughout the facility.	CR02	
Spent Chromic Acid – 30-gallon drum which was used to accumulate spent chromic acid used at the facility to etch various products.	D002, D007	
Residual Paint Related Waste – 55-gallon drum which was used to accumulate various latex based product containers including paint, epoxies, and surface coating materials throughout the facility. The containers placed in the drum still contained free liquid and/or solid liquid blends.	CR04	

Discussion:

Recycling

Student Workbook Activity # 15

Directions: Review the list of recyclable materials provided below. Place an “X” in the space provided for the items that you currently recycle. Place a “?” in the space provided for the items that you currently do not recycle. Provide comment in the discuss section describing potential management options for implementing recycling programs for the items in the list which were assigned a “?”.

Glass & Metal Food & Beverage Containers

Corrugated Cardboard

Newspaper

White Office Paper

Scrap Metal

Nickel Cadmium Rechargeable Batteries

Used Oil

Lead Acid Batteries

Leaves

Type 1 & 2 Plastic Containers

Magazines

Drink Boxes & Juice Containers

Discarded Mail

Used Electronics

Discussion: