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SCIENCE/SCOPE

Besides providing cloud pictures every 30 minutes day and night, Japan's newest weather satellite serves as a vital link in monitoring tides, tidal waves, and ice conditions in the western Pacific Ocean. GMS-2 (Geostationary Meteorological Satellite) relays data from remote sensors on buoys and fixed land locations to weather centers. The sensors transmit data at regular intervals, when readings exceed certain limits, or when they receive a command signal relayed through the satellite. GMS-2 was built by Hughes for and with the help of Nippon Electric Company. It was launched on Japan's N-II rocket, becoming the first geosynchronous satellite built in the U.S. and launched in another nation.

Ambitious manned missions in space will become possible with development by NASA of advanced solar-power platforms capable of electric-power output as high as 100 kilowatts or more. Hughes, under contract to the NASA Lewis Research Center, is building a breadboard 25-kilowatt dc-to-dc power converter that uses a transistorized series-resonant inverter. This module provides the basic building block required to match solar-array characteristics to payload requirements. The 25-kilowatt converter will utilize technology demonstrated earlier by Hughes in development of a lightweight 10-kilowatt converter that operated at over 91 percent electrical efficiency.

A new software system can translate naval tactical messages into understandable form. Messages within a command, control, and communications (C^3) system are typically hard to understand because they are transmitted in telegram form and often omit subjects, direct objects, articles, prepositions, and punctuation. If grammatical errors creep in, messages can be rendered unintelligible. While conventional computer techniques can't make sense of a garbled message, a Hughes message understanding system called GRACIE can. Using artificial intelligence techniques, GRACIE understands general descriptions of flights of aircraft over ships, of attacks, and of encounters with hostile ships. It constructs grammatical sentences based on what it expects messages to be, referring when necessary to a "rule book" of examples. It can be adapted for other than naval use.

Small and disadvantaged businesses support U.S. space and defense efforts by supplying parts and serving as subcontractors. Hughes has been a leader in tapping the skills and capabilities of these increasingly important businesses. In fiscal year 1981, Hughes awarded 70.6 percent of all purchase orders and 47.3 percent of the company's procurement dollar to small business. During the same period, $38.2 million went to disadvantaged business.

Hughes is seeking engineers to develop advanced systems and components for many different weather and communications satellites, plus the Galileo Jupiter Probe. Immediate openings exist in applications software development, data processing, digital subsystems test, microwave/RF circuit design, power supply design, digital communications, signal processing, spacecraft antenna design, system integration test and evaluation, and TELCO interconnection. Send your resume to Tom W. Royston, Hughes Space & Communications Group, Dept. SE, Bldg. S/41, M.S. A300, P.O. Box 92191, Los Angeles, CA 90009. Equal opportunity employer.

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7 May 1982

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SCIENCE

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AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

COVER

NGC 4603. A late Hubble-type (Sc) galaxy in the Centaurus cluster of galaxies. The bright, blue spiral arms outline the sites where star formation has been triggered recently in the disk of this galaxy. The bright nuclear bulge is an aggregate of stars believed to have formed more than 10 billion years in the past during the earliest evolutionary stages in the development of NGC 4603. See page 571 [Photograph was derived from images taken at the 4-meter telescope of the Cerro Tololo Interamerican Observatory and processed at the Kitt Peak National Observatory; © Association of Universities for Research in Astronomy, Inc., The Cerro Tololo Interamerican Observatory]

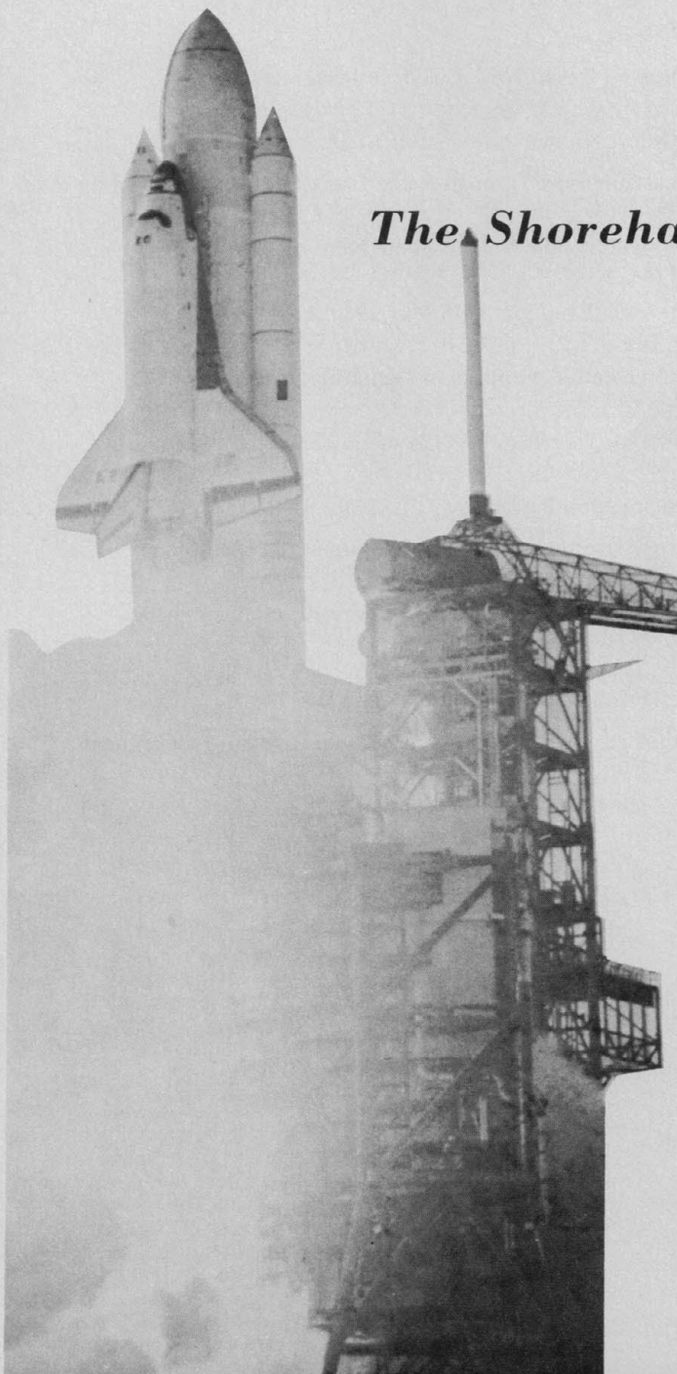
The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

R&D in the FY 1983 Budget: Impact and Challenge

7th Annual AAAS Colloquium on R&D Policy

23–24 June 1982

The Shoreham Hotel, Washington, D.C.



Issues include:

R&D policy and the FY 1983 budget ☐ *the climate for industrial R&D* ☐ *R&D programs of key federal agencies* ☐ *impacts on the scientific and engineering communities*

Participants include leaders from:

OMB, OSTP, and federal agencies ☐ *Congress* ☐ *industry* ☐ *the scientific and engineering communities* ☐

In addition:

Research and Development: AAAS Report VII, *by Willis H. Shapley, Albert H. Teich, and Jill P. Weinberg, will be provided in advance to Colloquium registrants. The* **Report** *covers R&D in the federal budget for FY 1983 and other topics on R&D and public policy. Registrants will also receive the published* **Proceedings** *of the conference.*

For further details, write: R&D Colloquium, AAAS Office of Public Sector Programs, 1776 Massachusetts Avenue, NW, Washington, D.C. 20036.

Sponsored by the AAAS Committee on Science, Engineering, and Public Policy.

To register early, use the Colloquium registration form on the facing page.

7th R&D Colloquium Washington, 23 & 24 June 1982
Advance Registration Form

Wednesday & Thursday, 23 & 24 June, at The Shoreham Hotel, 2500 Calvert St., N.W., Washington, D.C.

Registrant's Name _____
(last name) (first name and initial)

Affiliation _____

Mailing Address _____
(street and number)

_____
(city) (state and zip) (telephone number)

☐ **Please check here if you need special services due to handicap. We will contact you prior to the meeting.**

Enclosed is a check, purchase order, or credit card information (see below) for:

☐ $125 Full Registration (sessions, three meals, R&D: FY 83 Report, and Proceedings)
☐ $ 70 Partial Registration (sessions, Report, and Proceedings)
☐ $ 35 Student Registration (sessions, Report, and Proceedings; fulltime graduate or undergraduate only)

Separate Meal Tickets (lunches at $17 and dinner at $25; no refund for meals after 21 June)
☐ Lunch on Wednesday, 23rd ☐ Dinner on Wednesday, 23rd ☐ Lunch on Thursday, 24th

Program, badge, meal tickets, and R&D: FY 83 Report will be mailed 12 June. Registrations received after 12 June will be held at the AAAS Registration Desk at The Shoreham Hotel. Reports from previous years (order below) will be sent as soon as possible. Proceedings of '82 Colloquium will be sent as soon as available.

Previous Reports and Proceedings ($5 each book): ☐ R&D: FY 82 ☐ R&D: FY 81 ☐ R&D: FY 80
☐ Proc. 81 Col. ☐ Proc. 80 Col. ☐ Proc. 79 Col.

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Return both top & bottom forms (full page) to the following address:
AAAS Meetings R&D, 1515 Massachusetts Ave., N.W., Washington, D.C. 20005

Shoreham Hotel Reservation—AAAS Colloquium (23 & 24 June)

(Reservations received after 23 May cannot be guaranteed)

Names and Addresses of All Occupants of Room:

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Address _____ Address _____

City _____ State _____ Zip _____ City _____ State _____ Zip _____

Room: ___Single ($70*) ___Double ($84*) ___Twin ($84*) (*Plus 10% D.C. sales tax and 80¢ occupancy tax.)

Arrival: Date _____ Time _____

Departure: Date _____ Time _____

Be sure to list definite arrival and departure date and time. Hotel reservations will be held only until 6 p.m. unless otherwise specified. Check out time is 1:00 p.m.

Please indicate any special housing needs due to handicap _____

Enclose separate check, made out to The Shoreham Hotel, for first night's room deposit **or** indicate major credit card number:

Credit card name_____ Number_____ Expires _____

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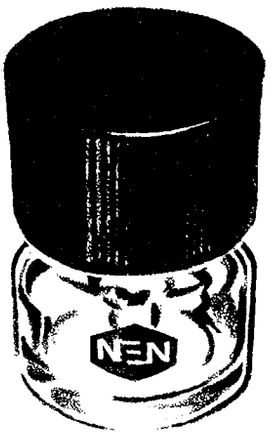

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4. M. G. Langseth and R. P. Von Herzen, in *The Sea*, A. E. Maxwell, Ed. (Wiley-Interscience, New York, 1971), vol. 4, part. 1, p. 299.
5. A. J. Erickson, R. P. Von Herzen, J. G. Sclater, R. W. Girdler, B. V. Marshall, R. Hyndman, *J. Geophys. Res.* **80**, 2515 (1975).
6. R. P. Von Herzen, J. Crowe, K. Green, *Eos* **60**, 382 (1979).
7. R. N. Anderson, M. A. Hobart, M. G. Langseth, *Science* **204**, 828 (1979).
8. J. Crowe and A. J. Silva, *J. Geophys. Res.*, in press.
9. R. N. Anderson and M. Zoback (*ibid.*, in press) have measured negative pore pressures in ocean crust of about 10 bars below hydrostatic. These have been modeled as resulting from hydrothermal circulation, which may produce positive pore pressures of comparable magnitude elsewhere.

We thank Mangelsdorf *et al.* for raising the problem of pore water convection. We also feel that site-specific studies should be done when (or if) candidate areas are actually selected, perhaps in the time frame of the late 1980's. Their additional site selection criterion has been added to our list.

Furthermore, we continue to caution against advocating the subseabed disposal concept until these and other scientific questions are put to rest. Our effort is very young, as compared to other waste isolation schemes, and very little money, comparatively, has been allocated to this program. Our chief concern is that the concept will not be allowed to stand, or fail, on its technical merits, or discrepancies, because of the tremendous inertia built into other waste disposal projects and because of the standard bureaucratic paradigm: nothing erodes the public's confidence in a waste disposal project faster than the study of viable alternatives.

We continue to stress that ours is not an alternative; rather it is one other geologic isolation concept that may or may not be the *n*th repository after a continental rock has been chosen as a first repository. We agree that a land-based option should be pursued to completion, and we do feel that there will be a need for more than one repository.

We view the issue of waste isolation in a regionally strategic perspective. We would like to see that this concept gets fair and open peer-reviewed critique. We also believe that other concepts should be similarly judged. Public confidence in the decision-making process cannot be achieved without such intercomparisons.

CHARLES D. HOLLISTER
Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543

Erratum: In the report "Abnormal glutamate metabolism in an adult-onset degenerative neurological disorder" by Andreas Plaitakis *et al.* (9 Apr., p. 193), the identification number of the grant from the National Institutes of Health Division of Research Resources [(*15*), p. 196] is misprinted. It should read RR-71.

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7 May 1982, Volume 216, Number 4546 **SCIENCE**

Ten Years After Stockholm

In 1972 the Stockholm Conference on the Human Environment marked a peak of public concern for the maintenance of environmental quality. One of its outcomes, the United Nations Environment Programme (UNEP), is celebrating the 10th anniversary of the conference with a "session of special character" on 10 to 18 May in Nairobi, where national and nongovernmental representatives will review events of the decade and lessons to be drawn from them. What can be said of significance for the scientific community?

It is relatively easy to rack up the scores on the legal and administrative measures taken in response to the Stockholm Conference recommendations. UNEP provides a succinct account of treaties ratified or not ratified, agencies established, programs initiated, and meetings convened in large number.

It is extremely hard to appraise what, in fact, has happened to the principal components of the environment—the atmosphere, marine environment, inland waters, lithosphere, terrestrial biota, and people. The evidence as reported by UNEP is ragged. The trends that can be discerned with confidence show good news and bad news, and I note a few of each.

Compared with the situation in 1972, the rate of annual population growth in 1980 was diminishing on all continents except Africa. The quality of air in many high-income cities was improving. Likewise, contaminant loads in the inland waters of industrialized countries were generally decreasing. Significant advances were made in reclamation of surface-mined lands and in establishing reserves for the preservation of terrestrial biota.

On the negative side, urban air quality in low-income countries continued to decline. The pollution of certain sectors of coastal waters increased, although the marine production in large sectors grew slightly or leveled off. Deterioration of many semiarid lands and of some irrigated soils expanded. Moist tropical forests were being reduced, but there was a wide divergence among the estimates concerning rates and extent. The implications of increasingly massive alterations in the global cycling of carbon, sulfur, and nitrogen were only beginning to receive integrated analysis.

The assembled data on these and numerous other trends not mentioned here should be critically appraised. While they will no doubt be interpreted in different ways, at least three observations deserve the immediate attention of the scientific community.

First, as revealed by the difficulty in measuring changes, a more coherent effort needs to be made to monitor key parameters. The expectations of many at Stockholm that an efficient global earthwatch program would soon be put into place proved sanguine. The present deliberate effort should be streamlined and its pace should be accelerated.

Second, it is becoming evident that appraisals of all but a few basic changes such as those in atmospheric carbon dioxide or ozone are most meaningful on a regional basis, where the intertwining of biological, physical, and social factors can be examined in context. Promising advances, for example, have been made in looking at regional seas rather than at the oceans as a whole.

Third, the scientific grounds for measures to correct much of the degradation in soil, water, biota, and air are well known, but there needs to be more systematic analysis of ways of overcoming social and political obstacles to undertaking them. While speculation runs high on questions of long-term climate change, the quiet degradation of biotic and soil resources proceeds.

The decade after Stockholm has shown that environmental improvement can be achieved, that the pace is slow in many areas, and that scientific inquiry can help speed it up.—GILBERT F. WHITE, *Gustavson Professor Emeritus of Geography, Institute of Behavioral Science, University of Colorado, Boulder 80309*

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Special issue for Science, May 7, 1982

In This Issue

Nalgene product news

Introducing Nalgene® Plastic Animal Cages

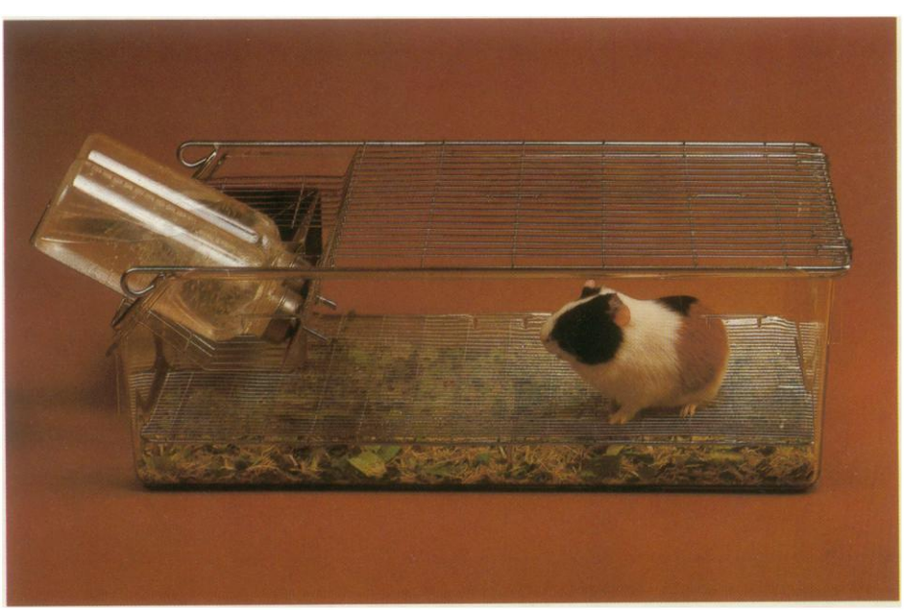
Choose from 7 sizes to house and breed lab rodents, from mice to guinea pigs

Here's a full line of animal cages that are clearly better for your small lab animals. Each Nalgene cage is a fully-integrated system, designed with meticulous attention to detail. These cages are safe and sanitary for animals, easy for you to use and clean. And they've withstood the test of time; they've been sold in Europe for 20 years.

Nalgene Plastic Animal Cages meet NIH guidelines for cage sizes. Seven different cages are available to accommodate mice, rats, hamsters, guinea pigs and gerbils.

Choice of highest quality materials

Choose cage bodies molded of transparent polycarbonate or translucent polypropylene*, both autoclavable.



Nalgene Plastic Animal Cage for guinea pigs. Cage body 660-1354 is shown with guinea pig feeder 672-1354 and other components.

PC provides glass-like clarity and superior impact resistance, while PP is recommended for repeated autoclavability, better stain resistance and excellent chemical resistance to urine and other body fluids. PP is also better suited for use with radioactive materials. It's easier to clean and resists typical decontaminants.

*Polypropylene cage bodies are translucent, except for the two largest sizes, which are opaque, glass-filled polypropylene.

continued on page e

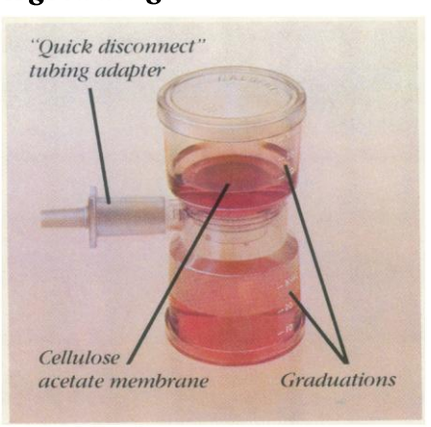
What's New

A sterilization filter unit especially for small volumes

New Nalgene 30-mL unit

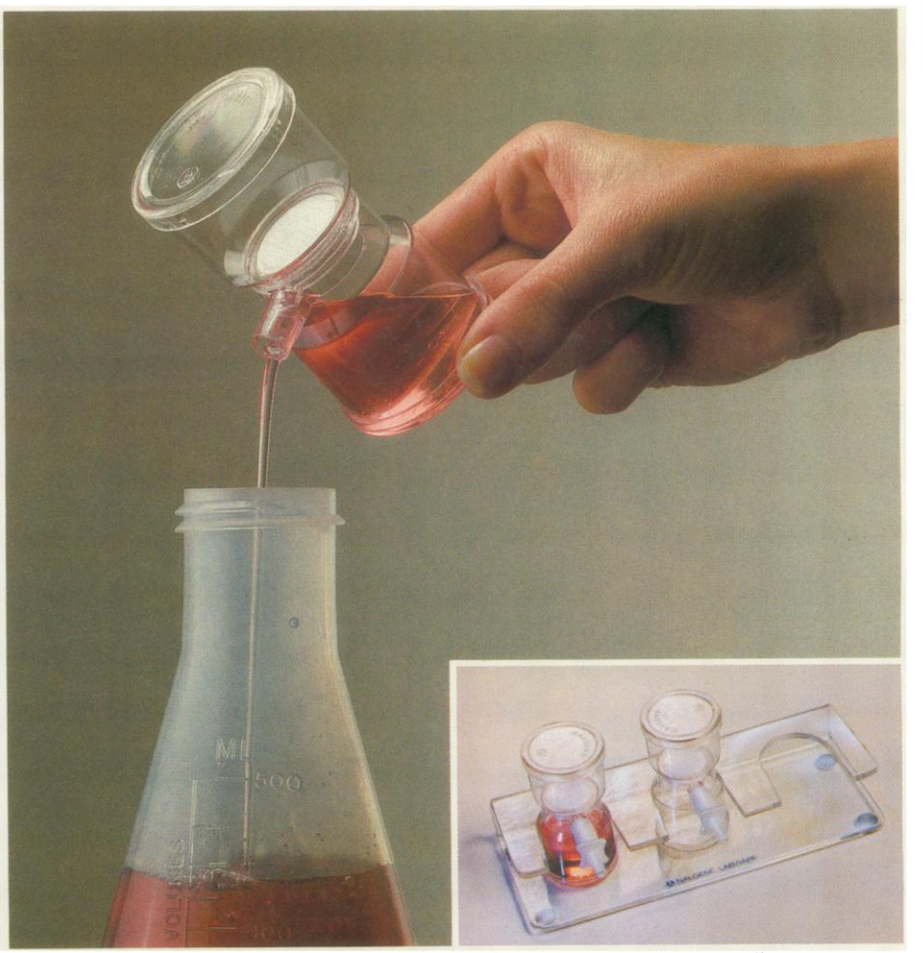
Here is the first and only small volume filter unit featuring a simple, unitary design. Like our popular 115-mL units, the Small Sterilization Filter Unit is a complete, disposable, presterilized membrane filtration system. It filters enzyme solutions, laboratory reagents, media and media components such as heat labile carbohydrates, antibiotics and dilute serum enrichments. This unit can sterilize, prefilter or clarify up to 30 mL, and it's ready the minute you need it. Like the 115-mL units, this one is made of transparent, non-toxic polystyrene.

A good design made better



To make your filtration work simpler, we've included some new features with this unitary design.

- The new support plate doesn't require a support pad, so you avoid sample loss due to adsorption, thereby maximizing sample recovery.
- Each unit comes with a cotton-plugged "quick disconnect" tubing adapter attached to its sidearm.
- The 25-mm membrane is cellulose acetate, the membrane of choice for cold sterilization of liquids. It has good chemical resistance to ethanol and methanol, and exhibits low binding properties for minimal adsorption of proteinaceous materials. It's ideal for sterilizing biological materials such as interferon and enzymes.



Using the Small Sterilization Filter Unit to add filtered component to media.

- For convenient measuring, the upper chamber and the receiver are graduated at the 10-, 20- and 30-mL levels.

Choice of porosities

- Available in two membrane porosities. Use the 0.20-micron porosity for sterilization and the 0.45-micron porosity for purification and clarification. Pore size is stamped on the bottom of the unit—in red on units with an 0.20-micron porosity and in green on units with an 0.45-micron porosity.
- Fits into the new Nalgene Small Filter Unit Holder, Cat. No. 400-0300 (see below).

Patent Pending

Specifications

Small Sterilization Filter Unit

Cat. No. 160	-2020	-2045
Membrane porosity, μm	0.20	0.45
Membrane color	white	white
Membrane diameter	25 mm	25 mm
Price, per pkg. of 12	27.00	27.00
Price, per case of 72	162.00	162.00

Small Filter Unit Holder

Like the holder for the 115-mL filter units (Cat. No. 400-1000), the Nalgene Small Filter Unit Holder (above) frees your hands while the units are attached to a vacuum source. Like manifolds, this holder allows multiple setups, containing up to three units at once. They snap securely into place and are easy to remove. The holder is made of sturdy, transparent acrylic.

Specifications

Small Filter Unit Holder

Cat. No. 400	-0300
Dim., in.	8¾ x 3 x 1½
Price, each	16.50
Price, per case of 4	66.00

All Nalgene filtration products are for laboratory use only. They are not for in-vitro diagnostic use and not for parenterals.

For more information on the Nalgene Small Sterilization Filter Unit, circle no. 2 on the Reader Service Form or contact your lab supply dealer.

New Nalgene rectangular tanks molded of nylon

An excellent low-cost replacement for stainless steel solvent tanks

These new heavy-duty nylon tanks resist many organic solvents (including TLC and HPLC solvents), hydrocarbons, gasoline and other fuels. They're much stronger and more rigid than tanks made of cross-linked or fiberglass-reinforced polyethylene. What's more, they cost considerably less than tanks of stainless steel or fluoropolymers, such as Halar* E-CTFE or Kynar** PVDF.

- Compared to stainless steel: lighter, easier to handle, more economical
- Excellent chemical resistance to many organic chemicals (see chart)
- Extremely low permeation to solvents
- Excellent impact and abrasion resistance
- Rigid, self-supporting
- Can be painted
- Repeatedly autoclavable at 121°C.

**Registered trademark of Allied Corporation*
***Registered trademark of Penwalt Corporation*

Chemical Resistance Summary

Acids	N
Alcohols (except phenols, cresols, etc.)	E/G
Aldehydes	G/F
Bases	F
Esters	E
Hydrocarbons, aliphatic	E
Hydrocarbons, aromatic	E
Hydrocarbons, halogenated	E/G
Ketones	E
Oxidizing agents	N
Wetting agents/solutions	G

Chemical Resistance Classification

E— 30 days of constant exposure cause no damage. Plastic may even tolerate for years.
G—Little or no damage after 30 days of constant exposure to the chemical.
F— Some effect after 7 days of constant exposure to the chemical. Effect may be softening, deformation, loss of strength, and/or eventual dissolution of the plastic.
N—Not recommended for continuous use. Immediate damage (e.g. softening, deformation, loss of strength, dissolution) may occur.

This chemical resistance information is intended as a general guideline only. Before using Nalgene Nylon Tanks with a particular chemical, it is strongly advised that you test it under your own conditions. If any doubt exists regarding a particular application, contact Technical Service, Nalgene Labware Department.

WARNING:
Do not use acids in nylon tanks! Acids will cause softening, loss of strength and rigidity, and eventual dissolution of the tank. All Nalgene Nylon Tanks are marked to indicate material and warning against use with acids.

Temperature Guidelines for Nalgene Nylon Tanks

Nylon resists hot oil up to 150°C. It is strong at -29°C.

Note:

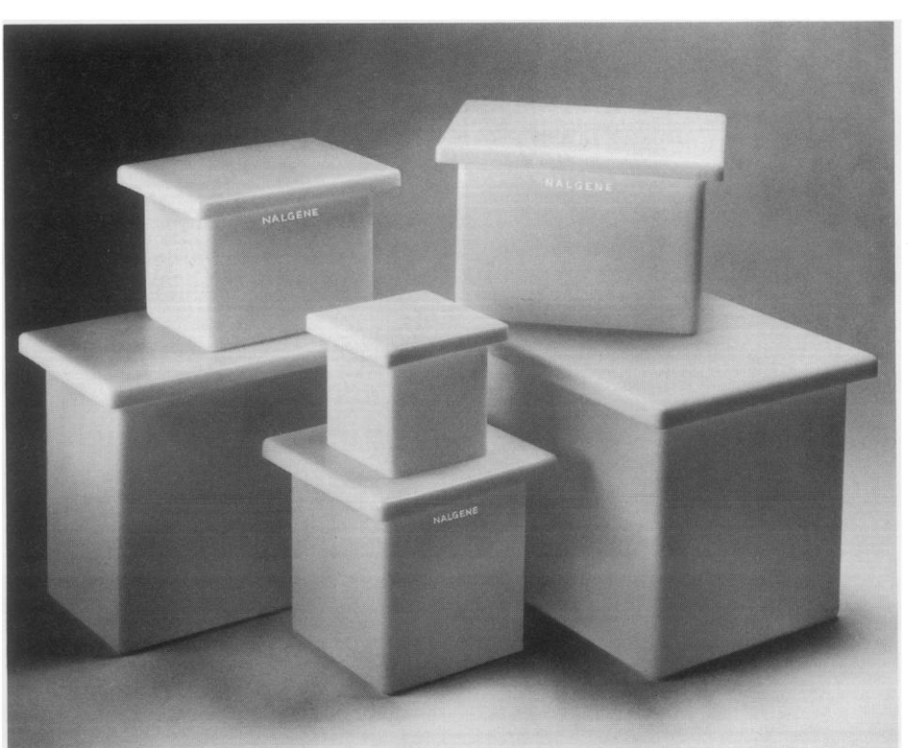
- All tanks listed above have a wall thickness of 5/32".
- The normal color of nylon tanks is "grey-brown", easily distinguished from LPE tanks.
- Tanks can be provided with bulkhead fittings, but cannot be used with welded ones. Contact Nalge for further information.
- Other sizes and shapes are available on request.

For more information about Nalgene Nylon Tanks, circle No. 4 on the Reader Service Form, or contact your lab supply dealer.

Specifications *Nalgene Nylon Tanks*

Cat. No.	Capacity	Nom. Dim. (inches) L x W x D	Price
14600-0002	2 gal.	8 x 8 x 8	40.00
14600-0005	6 gal.	14 x 10 x 10	55.00
14600-0010	7 gal.	12 x 12 x 12	55.75
14600-0015	11 gal.	18 x 12 x 12	69.50
14600-0040	15 gal.	18 x 12 x 18	102.00
14600-0045	30 gal.	24 x 18 x 8	170.25

Prices and specifications subject to change without notice.
Order Nalgene® labware from your lab supply dealer.



For solvent filtrations, try new Nalgene® Syringe Filters with Nylon Membranes

A second type of syringe filter is the latest addition to the growing Nalgene filterware product line. This new unit's nylon membrane and polypropylene housing are chemically resistant to a wide range of solvents, making it ideal for filtering samples and mobile phases used in gas chromatography and high-pressure liquid chromatography. The nylon membrane is naturally hydrophilic, contains no plasticizers or wetting agent, and has low levels of extractables. This makes it especially useful in critical applications requiring low contamination levels, such as cell/tissue work.

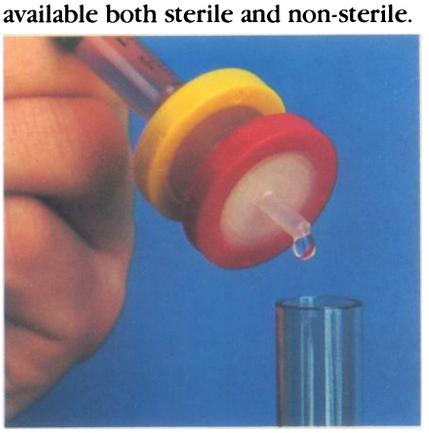
Like other Nalgene Syringe Filters, these new units fit both standard and Luer-lok* syringes. And, because the housing supports the membrane on both sides, you can perform either pressure or vacuum filtrations.

Additional features

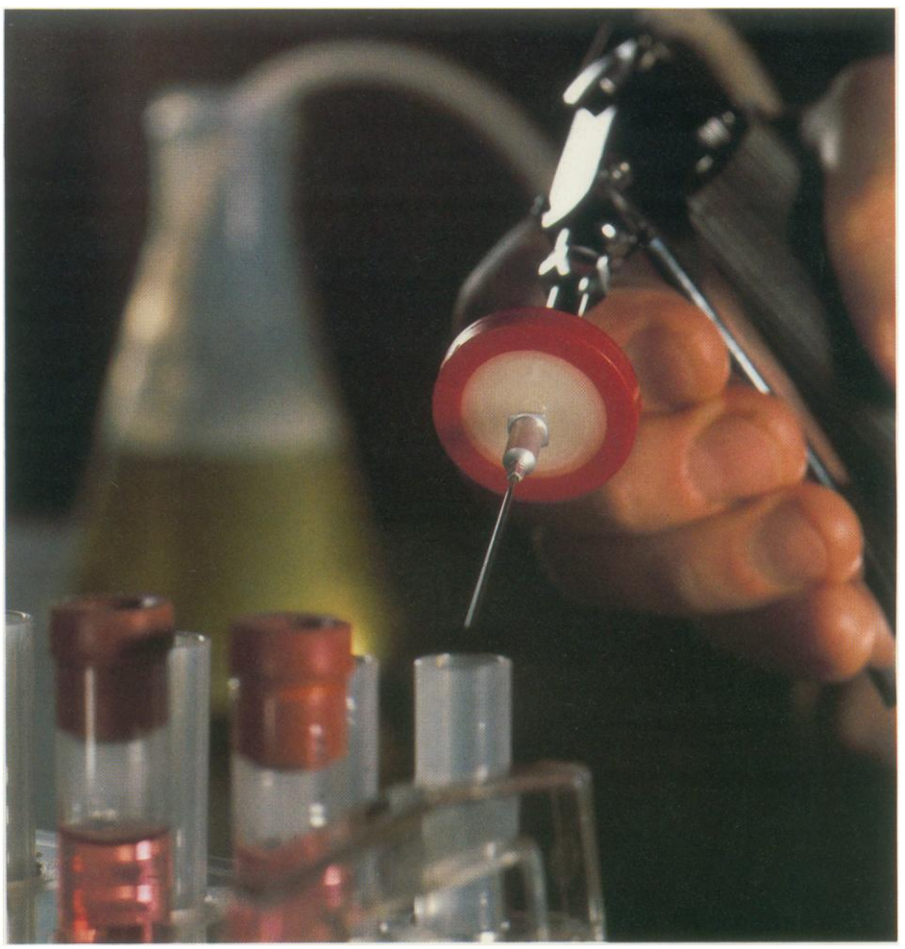
- The housing is glass-reinforced polypropylene, so it's autoclavable and has excellent chemical resistance.
- The integral seal between the membrane and housing makes the unit leakproof—there's no loss of sample or sterility, and no bypass.
- For quick, easy identification, the filter housings are color coded:
  0.20-micron unit: natural with red stripe
  0.45-micron unit: natural with yellow stripe

Which one's right for you?

For your convenience, these units are available both sterile and non-sterile.



Syringe Filters used in tandem for prefiltration and final filtration.



Syringe Filter with Nylon Membrane being used with repeating syringe.

If you want them presterilized and individually wrapped, ask for Cat. No. 195. If you don't require presterilization, or prefer in-house autoclaving, ask for Cat. No. 196. These non-sterile units are bulk packed in cases of 300—convenient for large-volume users.

** Luer-lok is a trademark of Becton-Dickinson & Co.*

Nalgene filtration products are for laboratory use only. They are not for in-vitro diagnostic use and not for parenterals.

For more information on Nalgene Syringe Filters with Nylon Membranes, circle no. 3 on the Reader Service Form or contact your lab supply dealer.

Specifications *Syringe Filters with Nylon Membranes*

Cat. No. 195	**-2020**	**-2045**
Membrane porosity, microns	0.20	0.45
Color	natural with red stripe	natural with yellow stripe
Price, per pkg. of 12	21.00	21.00
Price, per pkg. of 72	126.00	126.00
Cat. No. 196	**-2020**	**-2045**
Membrane porosity, microns	0.20	0.45
Color	natural with red stripe	natural with yellow stripe
Price, per pkg. of 50	82.50	82.50
Price, per case of 300	495.00	495.00

Animal Cages

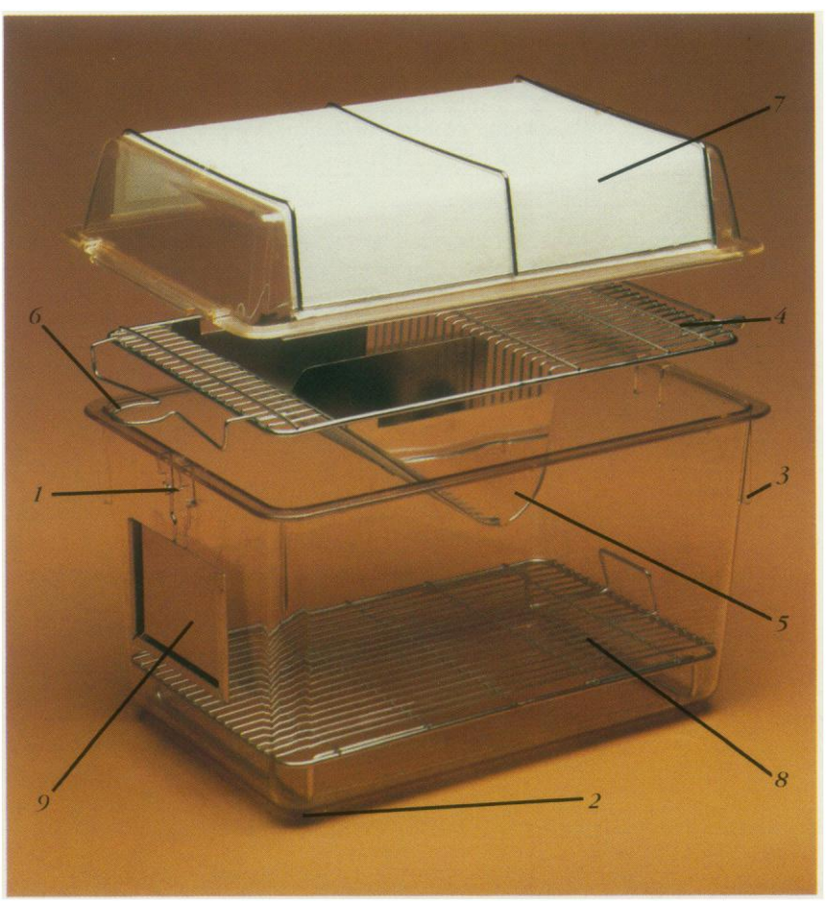
continued from page 1

Superior design and construction down to the finest detail

1. ***Cage bodies** feature unique, molded-in lid lock lugs.*
2. ***Rounded corners** make cleaning easy, minimize entrapment of food and other contaminants.*
3. ***Sturdy lugs** allow easy stacking of empty cage bodies without scratching or jamming. Permit convenient, space-saving storage.*
4. ***Stainless steel wire cage lid** is extra-strong, with cross-wires to prevent bending. Wires are spaced 7 mm apart, except for size Gb for guinea pigs, with wires spaced 19 mm apart.*
5. ***U-shaped food hopper** allows easy access to food, has no crevices to entrap food or other contaminants. Food won't bridge across feeder.*
6. ***Exclusive lid locks** fasten securely to polycarbonate or polypropylene cage bodies, assuring containment of animals.*

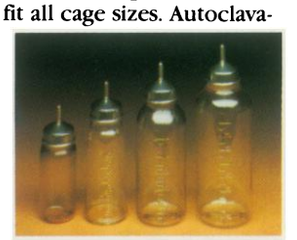
All metal parts are made of durable, rustproof type 304 stainless steel with electropolished finish. You'll find competitive animal cages that have parts of galvanized or nickel-plated steel; the plating can chip off or corrode.

7. ***Filter cover** provides a more protected environment, minimizes sudden variations in temperature, humidity, harsh drafts, CO_2 buildup. Promotes animal health, encourages breeding. Transparent frame permits easy observation of animals, monitoring of food and water. Cover fits over water bottle. Reusable style is shown here. Other sizes are disposable.*
8. ***Raised wire floor** has 30-mm elevation, separates animal from bedding and wastes. Especially desirable for post-surgical animals or those on controlled diets. Includes convenient handle for easy inserting and removing.*
9. ***Data card holders** take standard 3" x 5" cards, are available in horizontal and vertical styles. Swivel design lets you write on card without removing from holder.*

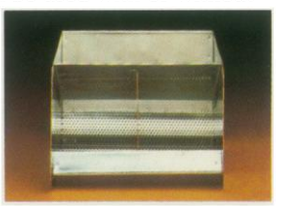


Accessories

- **Water Bottles:** Transparent, shatterproof polycarbonate. Permanent, molded-in graduations on all but smallest size. Chewproof stainless steel sipper tubes and caps. Four sizes available to fit all cage sizes. Autoclavable. Also available without caps.



- **Guinea Pig Feeder:** For use with guinea pig cage body and lid. Fits under wire lid. Can be used with or without raised wire floor.



- **Replacement Filters:** for use with filter cover size E (shown at left).
- **Data Card Holders:** described and pictured at left.

Specifications and Ordering Information

Nalgene Animal Cages include the following components, which must be ordered separately:

- Cage Bodies, polycarbonate (Cat. No. 660 + size code) or polypropylene (Cat. No. 662 + size code)
- Wire Cage Lids (Cat. No. 665 + size code)
- Raised Wire Floors (Cat. No. 666 + size code)
- Filter Covers (Cat. No. 667 + size code)
- Replacement Filters (Cat. No. 669 + size code)
- Racks (Cat No. 668 + size code)
- Water Bottles (Cat. No. 670 + size code)
- Water Bottles without Caps or Sipper Tubes (Cat. No. 673 + size code)
- Data Card Holders (Cat. No. 671 + size code)
- Guinea Pig Feeder (Cat. No. 672-1354)

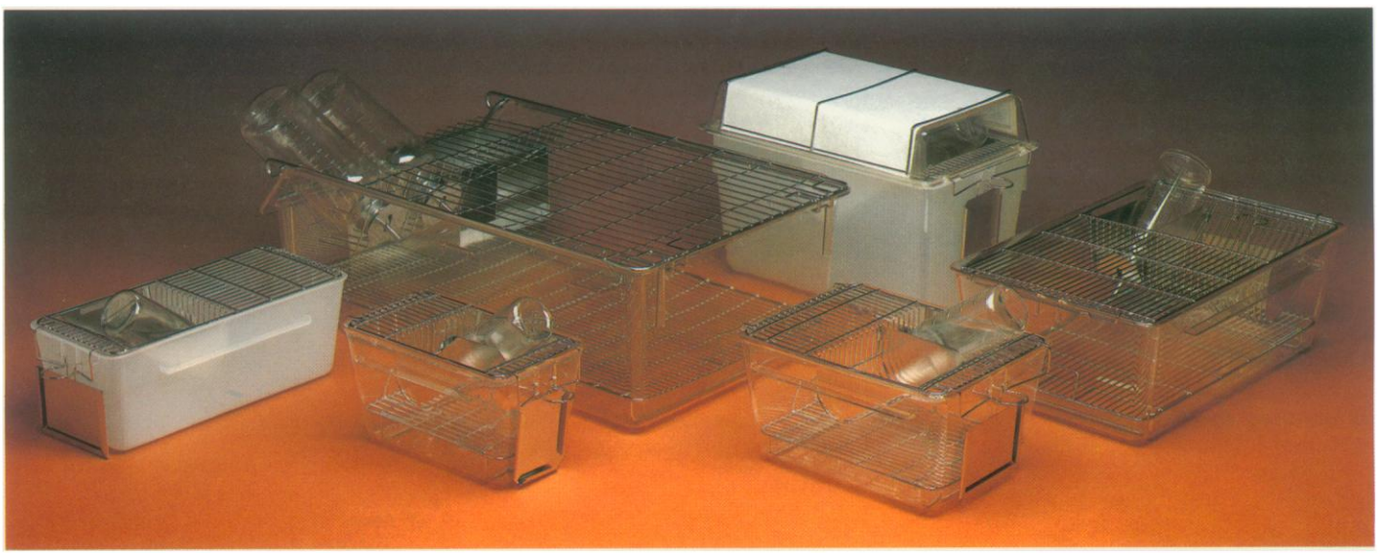
Before placing your order for Nalgene Animal Cages, contact Labware Customer Service to find out dealer availability. Call Shirley Casperson or Marg Ernst, (716) 586-8800.

Nalgene Animal Cages are not available in Europe.

To assist you in ordering compatible parts, the following size designations are used for all cage components:

Size	For Use with:
A	Mice
B	Mice
C	Mice
D	Mice, Hamsters
E	Rats, Hamsters
F	Rats, Hamsters
G	Rats, Hamsters, Guinea Pigs
Gb (refers to guinea pig lid only)	Guinea Pigs

For your FREE copy of the 8-page, full-color brochure on Nalgene Animal Cages, circle No. 1 on the Reader Service Form, or contact your authorized Nalgene Labware dealer.



Space Recommendations for Laboratory Animals

The charts below show the maximum number of animals, according to weight, that can be safely housed in each size of Nalgene cage (Cat. No. 660 or 662).*

Mice	CAGE SIZE CODES	-1177	-1144	-1264	-1290
	Animal Weight		**Maximum Number of Animals per Cage**		
	UNDER 10 g	5	9	10	20
	10 to 15 g	3	6	7	15
	16 to 25 g	2	4	5	10
	OVER 25 g	2	3	4	8
Hamsters	CAGE SIZE CODES	-1290	-2150	-2154	-1354
	Animal Weight		**Maximum Number of Animals per Cage**		
	UNDER 60 g	12	9	14	27
	60 to 80 g	9	7	11	21
	81 to 100 g	7	5	9	17
	OVER 100 g	6	4	7	14
Rats	CAGE SIZE CODES	-2150	-2154	-1354	
	Animal Weight		**Maximum Number of Animals per Cage**		
	UNDER 100 g	5	8	16	
	100 to 200 g	4	6	12	
	201 to 300 g	3	5	9	
	OVER 300 g	2	3	7	
Guinea Pigs*	CAGE SIZE CODE	-1354			
	Animal Weight		**Maximum Number of Animals per Cage**		
	350 g OR LESS	6			
	OVER 350 g	2			

* Adapted from NIH Publication No. 80-23, **Guide for the Care and Use of Laboratory Animals,** Rev. 1978

** Order Guinea Pig Feeder separately, Cat. No. 672-1354.

Order Nalgene® labware from your lab supply dealer.

Specifications and Ordering Information *Nalgene Plastic Animal Cages*

Cage Bodies: Polycarbonate

Cat. No. 660	-1177	-1144	-1264	-1290	-2150	-2154	-1354
Size	A	B	C	D	E	F	G
Overall dim. (L x W x H, cm)	24x14x13	33x15x13	27x21x14	43x27x15	36x24x19	48x27x20	59x39x20
Nom. floor area (sq. cm)	200	360	400	800	600	930	1800
No. of cages per case	20	20	10	10	5	5	5
Price, each	6.40	9.60	9.60	17.60	19.20	27.60	39.80
Price, per case	128.00	192.00	96.00	176.00	96.00	138.00	199.00

Polypropylene

Cat. No. 662	-1177	-1144	-1264	-1290	-2150	-2154	-1354
Size	A	B	C	D	E	F	G
Overall dim. (L x W x H, cm)	24x14x13	33x15x13	27x21x14	43x27x15	36x24x19	48x27x20	59x39x20
Nom. floor area (sq. cm)	200	360	400	800	600	930	1800
No. of cages per case	20	20	10	10	5	5	5
Price, each	3.20	4.80	4.80	7.40	8.00	12.80	19.20
Price, per case	64.00	96.00	48.00	74.00	40.00	64.00	96.00

Wire Cage Lids

Cat. No. 665	-1177	-1144	-1264	-1290	-2150	-2154	-1354	-1355
Size	A	B	C	D	E	F	Ga	Gb*
For use with	Mice	Mice	Mice	Mice & Hamsters	Rats & Hamsters	Rats & Hamsters	Rats & Hamsters	Guinea Pigs
No. in case	20	20	10	10	5	5	5	5
Price, each	17.60	20.80	20.80	27.20	24.00	31.00	56.00	46.40
Price, per case	352.00	416.00	208.00	272.00	120.00	155.00	280.00	232.00

*For guinea pigs, also select Guinea Pig Feeder, Cat. No. 672-1354

Raised Wire Floors

Cat. No. 666	-1177	-1144	-1264	-1290	-2150	-2154	-1354
Size	A	B	C	D	E	F	G
No. in case	20	20	10	10	5	5	5
Price, each	8.00	12.00	12.00	17.60	16.00	19.20	28.80
Price, per case	160.00	240.00	120.00	176.00	80.00	96.00	144.00

Filter Covers

Cat. No. 667	-1177	-1144	-1264	-1290	-2150	-2154
Size	A	B	C	D	E	F
Style	Disposable	Disposable	Disposable	Disposable	Reusable	Disposable
No. in case	20	20	20	20	5	5
Price, each	3.20	4.00	4.00	5.30	8.00	9.60
Price, per case	64.00	80.00	80.00	106.00	40.00	48.00

Cage Racks

Cat. No. 668	-1177	-1144	-1264	-1290	-2150	-2154	-1354
Accepts cage size	A	B	C	D	E	F	G
Rack dim. (L x W x H, cm)	126x42x187	153x42x187	127x42x187	124x48x187	134x45x187	150x52x187	168x66x187
Positions per rack	56	64	30	24	30	30	24
Tiers per rack	7	8	6	6	6	6	6
Price, each	936.00	996.00	766.00	752.00	888.00	899.00	799.00

Replacement Filters

Cat. No. 669	-2150
Size	E
Type	Disposable
Price, per package of 50	80.00
Price, per case of 100	160.00

Data Card Holders

Cat. No. 671	-0010	-0020
Style	Horizontal	Vertical
Fits cage size	A,B,C,D,E,F,G	E,F
Price, per package of 10	21.00	21.00
Price, per case of 100	210.00	210.00

*Water Bottles**

Cat. No. 670	-0150	-0250	-0500	-0750
For cage size	A & B	C & E	D,F & G	G**
Volume, mL	150	250	500	750
Price, per package of 12	84.00	94.20	103.80	113.40
Price, per case of 72	504.00	565.20	622.80	680.40

Guinea Pig Feeder

Cat. No. 672	-1354
For cage size	G
No. in case	5
Price, each	19.20
Price, per case	96.00

**Water bottles are also available without caps or sipper tubes (Cat. No. 673-). Consult dealer for details.*

***For use with -1355 lid*

Prices and specifications subject to change without notice.

Introducing

Nalgene Polyurethane Tubing

Clear, flexible, clean, chemical-resistant; it's PURfect for many lab uses!

New Nalgene Polyurethane ("PUR") Tubing is a high-purity lab tubing that will stand up to very demanding applications. It's clear and almost as flexible as conventional laboratory tubing with formulations based on polyvinyl chloride. Extraction of plasticizers or other volatile additives from these PVC formulations may cause hardening of the tubing or contamination of samples. **PUR Tubing is pure polyurethane; it contains no plasticizers and low levels of extractables, so it's ideal for high-purity work.** Compared with PVC tubing, PUR Tubing also has superior chemical resistance to fuels, oils and some solvents (see chart). And its excellent tensile strength and toughness make it suitable for pressure and vacuum applications.† It won't collapse under full vacuum. Because of its outstanding physical properties, PUR Tubing of a given wall thickness will perform as well as PVC tubing with much thicker walls. Available in 8 sizes, all sold in convenient 100-foot coils.

Typical applications for Nalgene PUR Tubing

- High-purity work
- Vacuum pumps and other vacuum applications
- Metering pumps
- Pressure applications†
- Degreasing lines
- Acid lines
- Gas, oil lines
- Liquid nitrogen transfer
- Slurry transfer
- Solids, granular transfer

† Nalgene PUR Tubing is suitable for use at 15 psi or higher, depending on temperature. For further information, consult Nalge Technical Service.

Chemical Resistance Summary

Strong mineral acids:	Not recommended
Organic acids:	Fair
Weak acids:	Good
Strong alkalis:	Good
Weak alkalis:	Excellent
Fuels and oils:	Good
Solvents (aliphatic, mineral spirit):	Good
Other solvents (including aromatic or halogenated):	Not generally recommended; test first and/or consult Nalge Technical Service

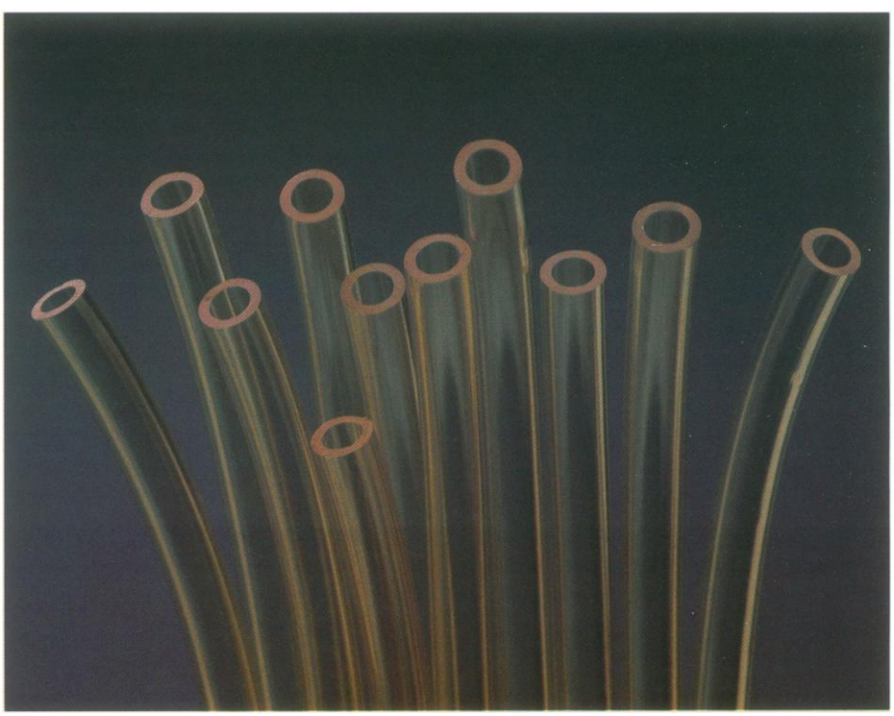
This chemical resistance information is intended as a general guideline only. Before using Nalgene Polyurethane Tubing with a particular chemical, it is strongly advised that you test it under your own conditions. If any doubt exists regarding a particular application, contact Technical Service, Nalgene Labware Department.

Physical Properties Summary

Durometer (Shore A):	85
Temperature resistance (dry heat):	93°C
Maximum recommended operating temperature:	82°C
Brittleness temperature:	-70°C
Abrasion resistance:	Excellent
Tear strength:	Excellent
Tensile strength:	Excellent

Note: Nalgene PUR Tubing is NOT autoclavable, but can be gas-sterilized.

We certify that the polyurethane resin used in Nalgene Polyurethane Tubing meets the requirements of the Food Additives Amendment of the Federal Food, Drug & Cosmetic Act.



Specifications *Nalgene PUR Tubing*

Cat. No. 8030

Size Code	I.D., in.	O.D., in.	WALL, in.	PRICE 100-ft. box *
0020	1/8	1/4	1/16	24.00
0030	3/16	5/16	1/16	30.00
0060	1/4	3/8	1/16	36.00
0120	3/8	1/2	1/16	50.00
0180	1/2	5/8	1/16	62.00
0225	5/8	3/4	1/16	77.00
0310	3/4	1	1/8	166.00
0350	1	1 1/4	1/8	220.00

*Minimum order: 1 box

Case History

"It Bounces and Doesn't Break!"

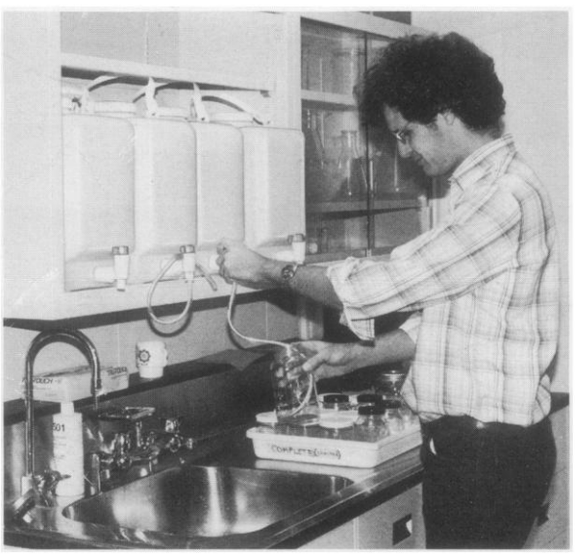
Nalgene labware in use at Bedford Institute of Oceanography

The Bedford Institute of Oceanography (BIO), located in Dartmouth, Nova Scotia, is Canada's principal oceanographic institute, ranking alongside the Scripps Institute and Woods Hole in the U.S. BIO conducts oceanographic studies and hydrographic surveys in the North and South Pacific, the North and South Atlantic and the Arctic Ocean.

BIO has labs aboard each of its five research vessels. Wherever the ships go, personnel use Nalgene labware almost exclusively, purchasing thousands of dollars worth annually. Brian Erwin, a biologist at BIO, says, "Our primary reason for buying Nalgene labware is that if it's dropped, it bounces and doesn't break. That's especially important for sailing in rough seas."

At their labs in Dartmouth, BIO personnel use everything from volumetric flasks and separatory funnels to carboys and tubing. Here they study the ecology and physiology of plankton and other marine organisms, and interactions in the ecology of marine ecosystems. This research helps to predict the biological productivity of the oceans.

Looking for living organisms, BIO biologists sample sediments on the tidal flats of Cumberland Basin, near Amherst, Nova Scotia, in an extensive ecological study of the Bay of Fundy. Note Nalgene jerricans, cylinders, and wash bottles. Photo by H. Wiele.



R. Mahon dispenses from Nalgene Rectangular Aspirator Carboys into bottles.

In the BIO Lab at Dartmouth, R. A. Fitzgerald uses Nalgene Separatory Funnels, Cylinders, Volumetric Flasks, Bottles, Sample Vials and Beakers.

Breaking the Glass Habit

For demanding applications in the lab or in the field, you need tough Nalgene bottles

Plastic bottles are not all alike. Take a good look at "The Anatomy of a Nalgene Bottle" (facing page), and see exactly why these are the finest plastic laboratory bottles available today.

Bottle and closure make a leakproof system

A seal ring, molded into the closure, makes a Nalgene bottle leakproof without the need for a closure liner. Both bottle and closure have deep, continuous threads. It's just about impossible to snap these threads by over-torque.

Wide selection of materials, styles and sizes gives you versatility

Choose from seven premium plastics, for the combination of chemical and physical properties you need for the job at hand. Choose transparent, translucent or opaque bottles.

- Conventional (low density) polyethylene (CPE)
- Linear (high density) polyethylene (LPE)
- Polypropylene (PP)
- Teflon† fluorinated ethylene propylene (FEP)
- Polycarbonate (PC)
- Polyvinyl chloride (PVC)
- Polymethylpentene (PMP)

Only top-grade resins are used to mold Nalgene bottles. No fillers, extenders or plasticizers are added. All resins meet requirements of the Food Additives Amendment of the Federal Food, Drug and Cosmetic Act, except PVC.

†*Registered trademark of the Du Pont Company*

Choose from 218 different bottles, including 19 sizes—from one ounce to 13 gallons—in configurations like these:

- Narrow-mouth and wide-mouth round, square and rectangular bottles
- Jars and jugs
- Largeware, including carboys, aspirator carboys, jerricans, solution bottles and Lowboys (low-profile carboys)
- Wash bottles and drop-dispenser bottles
- Centrifuge bottles

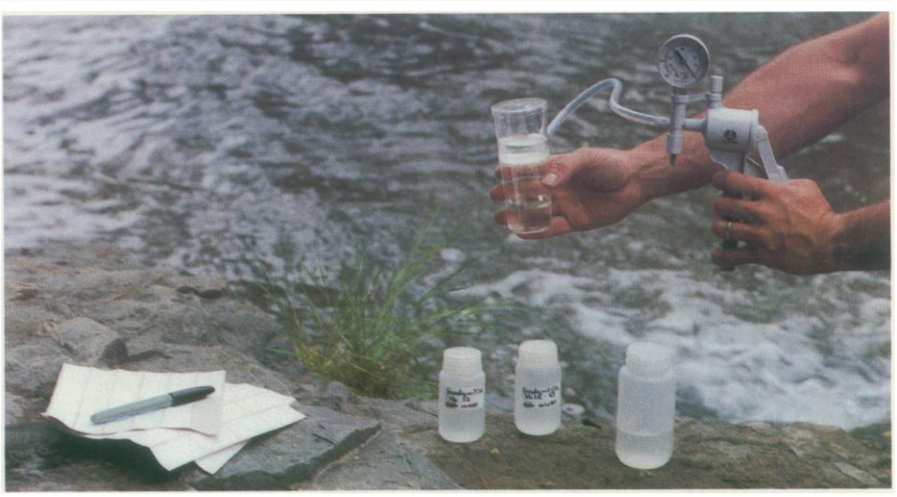
With few exceptions, these bottles are available in stock.

Metric by design

Nalgene bottles are designed to metric specifications, not simply converted from ounces or gallons. This gives you a larger bottle. For example, a 500-mL Nalgene bottle holds almost 17 ounces at the shoulder. Carboys, up to 50 liters in capacity, are also sized metrically.

The Nalgene Labware Catalog includes complete details on the full line of Nalgene bottles.

Special Offer! **For a FREE Nalgene Wide-Mouth LPE Bottle (125-mL capacity), check the appropriate box on the Reader Service Form.**
Offer expires June 30, 1982.



Because they're break-resistant and lighter than glass, Nalgene bottles are ideal for field work. Here, Nalgene CPE Wide-Mouth Bottles (Cat. No. 2103-) are being used for water sampling. Also pictured: Nalgene 115-mL Analytical Filter Unit (Cat. No. 130-4045), Nalgene Hand-Operated Vacuum Pump with Gauge (Cat. No. 6130-0020), Nalgene PolyPaper® Labels (Cat. No. 6309-), and Nalgene Lab Pen (Cat. No. 6310-0010).

The Anatomy of a Nalgene® Bottle

Plastic bottles are not all alike.

Take a good look at the details that put Nalgene bottles in a class by themselves.

Our bottles have been designed and manufactured for tough applications. **We start with a bottle that's engineered to form a system with its closure; then we add the features described below to produce the best plastic bottle you can buy.**

Leakproof Bottle and Closure System

Closure

The durable, one-piece closure is molded of polypropylene.*

Shrink Seal Ring

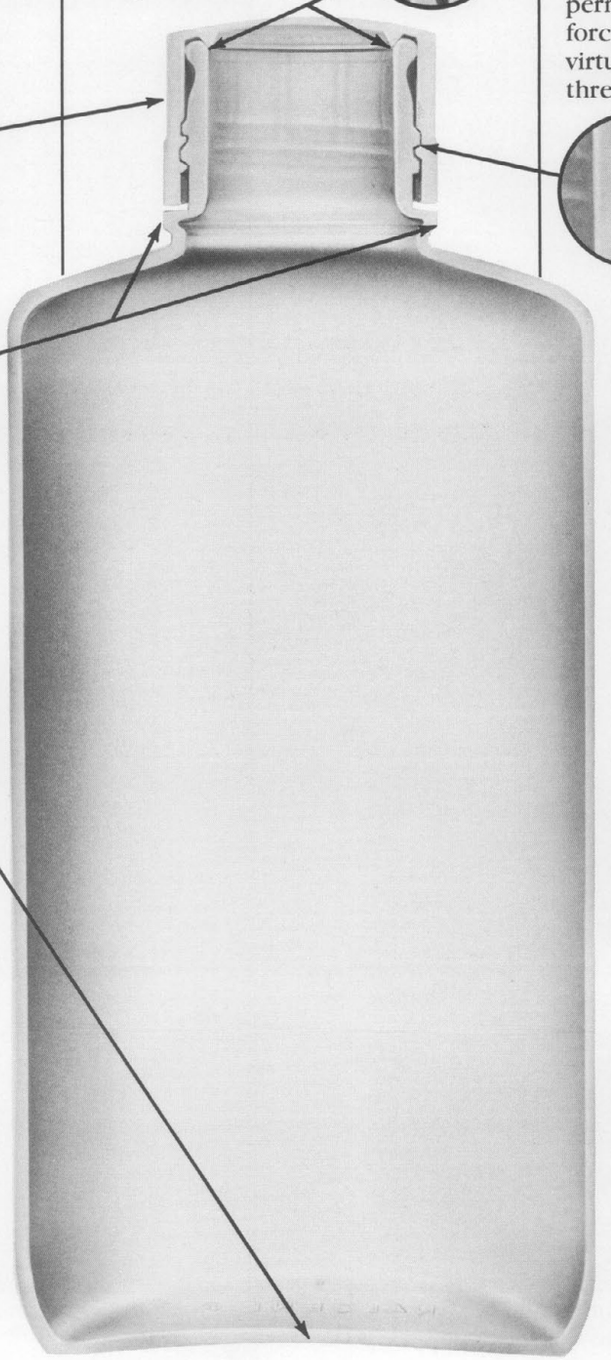
Nalgene bottles, from 30mL to 1L in capacity, have a shrink seal ring at the neck, which can also be used for attaching an identification tag for security or shipping purposes.

Bottom

Even the bottom of a Nalgene bottle is special. The inner corners are curved for easy cleaning. The base is flat for a wide stance and greater flexibility. Molded into the bottom are letters identifying the plastic used, the capacity in ounces and milliliters, and—most important for your protection—the Nalgene name.

Seal Ring

The seal ring is molded inside the closure and fits tightly against the beveled inner edge (chamfer) of the bottle neck as the closure is tightened. **This makes the Nalgene bottle totally leakproof, with no need for a closure liner that can wear, leak or cause contamination.** Hand tightening is all that's needed for a positive seal. (Only with 100-mm and larger closures do we recommend an optional closure liner to guarantee leakproof service.)



Threads

Threads on Nalgene bottles and closures are continuous and deeper than you'll find on typical plastic or glass bottles. This greater contact area permits twice as much tightening force against the seal ring. And it's virtually impossible to snap Nalgene threads by over-torque because they're not round, but straight-shouldered "semi-buttress" threads—another mark of good design.

Heavy-Duty, Uniform Walls

Weight is an indication of strength and reliability in plastic bottles. Hold a Nalgene bottle in one hand and any other plastic bottle in the other. You can feel and see the difference. **The rugged walls of Nalgene bottles are exceptionally resistant to splitting or puncturing.** Nalge's advanced molding technology gives you walls with a uniform quality not found in other bottles

Specify Nalgene bottles when you need precision-molded bottles for lab applications. We put a lot of extra value into our bottles. Don't settle for anything less.

Order Nalgene labware from your lab supply dealer.

** or Tefzel ETFE on Teflon FEP bottles*

Nalgene 1000-mL Wide-Mouth LPE Bottle in use at approximately 18,000 feet, with Dhaulagiri I in background. Attempted route was up the right side of the north face, shown here.

Case History

Choose the bottles chosen for the Himalayas

Nalgene® Bottles

Far from the rigors of the laboratory, Nalgene bottles and other products are being subjected to rigors of a different, yet equally demanding kind.

Since 1971, Nalge Company has supplied every major U.S.-sponsored Himalayan expedition with free products. Because of the high cost of such expeditions, the teams rely heavily on contributions from suppliers of the finest equipment available. The feedback we've received from these various climbs has been gratifying. The brief descriptions and photos will give you some idea of what two teams experienced, and how Nalgene products fared.

Annapurna III (1978)

This was the first American attempt to scale this 24,787-foot Himalayan peak. The seven-man American team led by Steve Van Meter, pioneered a new route and almost reached the summit. The feat included a 2000-foot climb up a sheer rock wall. Sadly, the team was forced to turn back only 800 feet from the summit, when some of the climbers were endangered by frostbite and altitude sickness.

"We wish to thank you for providing us with wide-mouth water bottles, jerry jugs (Nalgene Jerricans), and plastic funnels. The polyethylene bottles proved durable, with the lids giving an excellent seal throughout the entire climb...Though all of the locally purchased jugs showed signs of deterioration, the Nalgene jugs held up remarkably well. Two-and-a-half months of rugged use is by no means an easy test, and it is a tribute to your products that they held up so well."

R. Steve Van Meter, Nov. 1978

American Women's Expedition to Dhaulagiri I (1980)

In August 1980, a team of 18 climbers set out from Kathmandu, Nepal to conquer Dhaulagiri I, at 26,810 feet, the 6th highest peak in the world. This was the first attempt on this peak by a team consisting primarily of women. The team included several physicians and other scientists; and a considerable amount of medical, ecological, geological and meteorological research was carried out. In early October, tragedy struck. At Camp 4 (23,000 feet) an avalanche took the life of Australian plant ecologist Lyn Griffith and injured one of the Sherpa guides. Several days later, the climb was abandoned due to persistent avalanche conditions.

"Nalge made a generous donation to our effort by supplying poly (LPE) bottles, lab pens, plastic paper and notebooks...All Nalgene products were used with tremendous success. Some of the bottles were returned to the U.S. with team members and are continuing to work well. Primarily, we used the 1000-mL size for water bottles, as dehydration at high altitudes can be a serious problem. Before we departed, someone suggested that we bring spare caps for the bottles, as polypropylene was known to crack at low temperatures. Although our coldest temperature was -25°C (-13°F), none of the caps failed in any way. The notebooks and pens were used extensively for keeping important expedition records of porters' loads, supplies, etc., and for research data and notes. Despite conditions ranging from monsoon rains to high-altitude blizzards, the products worked excellently. The PolyPaper® Plastic Paper worked extremely well in all conditions. At one point, several sheets were immersed in water for almost a week."

Douglas Hardy, April, 1981

Other recent or current Himalayan climbs supplied by Nalge:

- 1980 American Makalu Expedition
- 1981 American Mt. Everest Expedition
- 1981 American Himalayan Whitewater Expedition
- 1982 American Himalayan Expedition (Pumori)
- 1982 American Women's Himalayan Expedition (Ama Dablam)

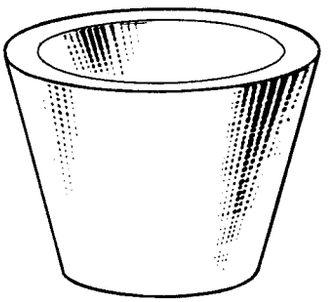
Annapurna III Expedition. Nalgene Jerrican makes a convenient storage container for water and other liquids.

Annapurna III Expedition.

The new Nalgene Vacuum Gasket

Made of natural kraton, a thermoplastic elastomer

Use this gasket with any filtering flask—glass or plastic—that requires a #7 or #8 stopper. Filter funnel slides quickly and easily in and out of gasket, without being jammed. One vacuum gasket is packed in each box of Nalgene Analytical Filter Funnels. Autoclavable.



Prices and specifications subject to change without notice.

Specifications

Cat. No. 395	-0708
Height	30 mm
Thickness	3 mm
O.D.	40 mm to 28 mm
Price, per pkg. of 6	7.20
Price, per case of 24	28.80

Breaking the Glass Habit

*Study finds Nalgene LPE bottles superior to glass for storing nitrogen standards**

To save time when performing nitrogen determinations, many labs store nitrogen standards and use them until they're exhausted. To ensure their reproducibility, standards must be stored in containers that won't affect them—the standards mustn't change or age in any way.

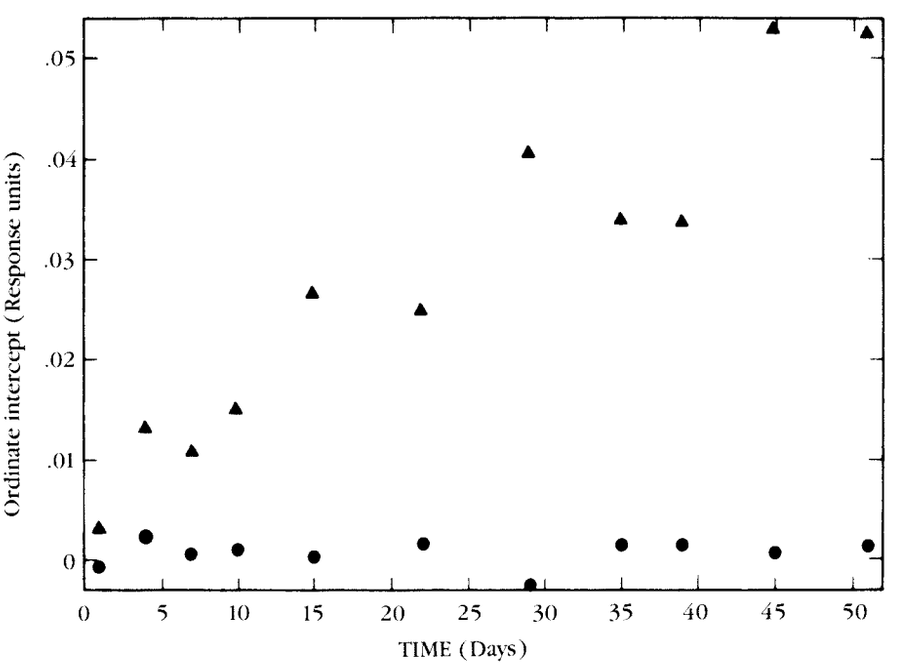
Kathleen Mitchell, at the Research Center of Phillip Morris U.S.A., conducted a 51-day study that evaluated the "aging" phenomenon in nitrogen standards as a function of storage conditions. She compared Pyrex† glass storage bottles, routinely used for storing standard solutions, with Nalgene linear polyethylene (LPE) bottles (Cat. No. 2104-0004).

The study demonstrates an aging effect on the standard solutions stored in glass: "The data from day 51 showing the lack of reproducibility between identically glass stored standard solutions and the large increases between responses on day 1 and day 51 can be described as an 'aging' phenomenon."

Ms. Mitchell also reports:

"Large differences in responses between concentration pairs, the increases in responses from day 1 to day 51...characterize glass as an unstable storage material for nitrogen standard solutions. ...The suggestion that standards may be stored for reuse is a valid labor saving measure provided preservation and stability are maintained by use of Nalgene high-density linear polyethylene containers."

Comparison Between Glass and Plastic Bottles for Storing Nitrogen Standards



Ordinate intercept values for the calibration curves for glass storage (▲) and Nalgene storage (●).

**Adapted with permission from Analytical Chemistry 1981, 53, 2381-2383. Copyright 1981 American Chemical Society.*

†*Pyrex is a registered trademark of Corning Glass Works.*

For a copy of this entire article, circle no. 5 on the Reader Service Form or contact your lab supply dealer.

Can't get new products? Ask us!

The new products described in this NPN issue may not be in your dealer's computer yet or even familiar to their salespeople. Be persistent, and if you have a problem getting what you want, call us at (716) 586-8800 and ask for Shirley Casperson or Marg Ernst in Customer Service.

Show Business

During the next few months, look for Nalge at the following trade shows:

Analytica 82

Analytica, Munich, West Germany
April 27-30, 1982
Booth #16703/705, Hall 16

Tissue Culture Association, Inc.

Tissue Culture Association,
San Diego, California
June 6-10, 1982
Booth #5

ACHEMA 82

Achema, Frankfurt, West Germany
June 6-12, 1982
Booth #F26, Hall 6, Second Floor

ift 82

International Food Technology,
Las Vegas, Nevada
June 22-25, 1982
Booth #152

Erratum

Nalgene Product News,
Vol. 1, No. 1, page 12

"Our Filmware® Heat Sealer has a new look."

The term "ignition temperature" and its definition as used throughout this article (including the chart) are not correct. The correct term is "autoignition temperature" and its definition should read:
The autoignition temperature is the lowest temperature required to initiate or cause self-sustained combustion independent of the heat source.

Our thanks to R. Ronning, Jr. and W. Keim for bringing this error to our attention.

Nalgene Product NEWS VOLUME 1, NO. 2 **READER SERVICE FORM**

- ☐ Send me the 1981-82 Nalgene Labware Catalog.
- ☐ Send me the 1982 Consumer Price List for Nalgene Labware Products.
- ☐ Send me a FREE sample 125-mL Nalgene LPE bottle.

Circle the appropriate number to receive literature on products covered in this issue:

1 Animal Cages
2 Small Filter Unit
3 Syringe Filter
4 Nylon Tanks
5 Nitrogen Standards

Name _____ Title _____

Organization _____

Address _____

City _____ State _____ Zip _____

Telephone Number _____

CUT, FOLD, TAPE, STAMP AND MAIL

Product Deletion

Nalgene Labware Department has deleted the Sample Digestion Vessel (Cat. No. 4130) from its product line. All backorders are cancelled and no further orders will be taken.

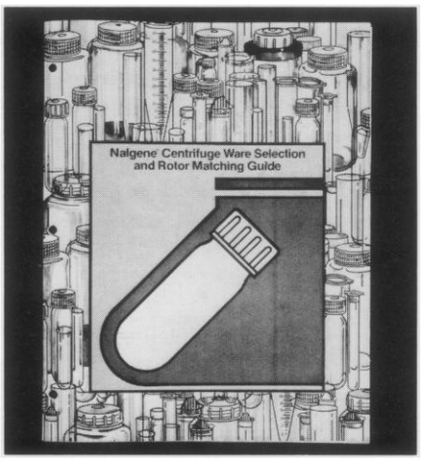
NALGENE LABWARE DEPARTMENT
NALGE COMPANY
P. O. Box 365
Rochester, New York 14602

PLACE
STAMP
HERE

FOLD

Specify Nalgene Labware
from your Lab Supply Dealer.

CUT



All you ever wanted to know about Nalgene centrifuge ware

Nalge developed its Nalgene® Centrifuge Ware Selection and Rotor Matching Guide to help you select the Nalgene centrifuge ware best suited to your applications and procedures. In addition, the guide will assist you in selecting centrifuge ware compatible with various centrifuge rotors and their accessories.

The guide is divided into two sections. The first one includes information on the physical and chemical properties of the resins used to manufacture Nalgene centrifuge ware. Section II consists of three tables matching Nalgene tubes and bottles with various rotors manufactured by Beckman, IEC and Sorvall.*

For your copy of the Nalgene Centrifuge Ware Selection and Rotor Matching Guide, contact your lab supply dealer.

* *Registered trademark of the Du Pont Company.*

Focus on Lab Safety

Important Update: Nalgene Emergency Eye Wash Station Meets Revised ANSI Standard

The Nalgene Emergency Eye Wash Station (Cat. No. 6340-) meets the requirements of ANSI Standard Z358.1-1981, E6.1.1. ANSI includes the Nalgene unit in the section covering "personal eye wash" equipment.

"Personal eye wash equipment... supports plumbed and self-contained units but does not replace them. The first few seconds following an eye injury are often critical to keeping eye injury to a minimum. A personal eye wash unit may be kept in the immediate vicinity of employees working in a potentially hazardous area. The main purpose of these units is to supply immediate flushing. With this accomplished, the injured individual may then proceed to a permanent facility and flush the eyes for the required 15-minute period." *

* *This material is reproduced with permission from ANSI Standard Z358.1-1981, "American National Standard for Emergency Eye Wash and Shower Equipment", copyright 1981 by ANSI. Copies of this standard may be purchased from ANSI, 1430 Broadway, New York, NY 10018.*