Personal Protective Equipment Policy

Personal protective equipment (PPE) is made readily available in the laboratories and based on laboratory hazard assessments, are to be used by all faculty, students, and staff. College University conducts required laboratory hazard assessments in accordance with OSHA 29 CFR 1910 Subpart I, *Personal Protective Equipment* using methodologies suggested in Appendix B to Subpart I, Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection. Laboratories are also to provide appropriate PPE for all visitors.

General laboratory hazard assessments are conducted annually by the Environmental Health and Safety Office (EHSO) and include a survey for each individual laboratory. Laboratory surveys include consideration of the following basic hazard categories:

- Chemicals
- Heat / Flammability
- Particulates
- Impact
- Penetration
- Compression (roll-over)
- Light (optical) radiation

Laboratory hazard assessments include a walk through and evaluation of chemical, equipment, and process hazards present in each laboratory. Consideration of the chemical hazards present is performed through (1) an annual inventory of the chemicals in each laboratory and (2) daily monitoring of chemical orders and chemical stockroom deliveries to each laboratory. Material safety data sheet (MSDS) review of the chemicals present in each laboratory, conducted annually and at the time of chemical receipt, is carefully considered in the PPE analysis and selection process. Documentation and communication of the laboratory hazard assessments is achieved through hazard identification emergency contact signage posted at the entrance to each laboratory (See Appendix A for example signage).

Experiment specific laboratory hazard assessments for academic and/or research work are conducted as necessary by faculty and laboratory instructors or, by request, in collaboration with the EHSO. Experiment specific laboratory hazard assessments provide a mechanism for faculty and laboratory instructors to increase or decrease the general laboratory hazard assessment PPE requirements based on experiment specific protocols and associated safety considerations. For educational laboratories, experiment specific laboratory hazard assessments are to be documented, sent to the EHSO for record keeping, and clearly communicated to all experiment participants. For research laboratories, deviations from the general laboratory hazard assessment PPE requirements can be made at the discretion of the faculty supervisor based on the specific procedures being conducted. EHSO personnel provide guidance on appropriate levels of PPE across the range of experimental procedures encountered in the research setting.

Eye and Face Protection

Eye and face protection are to be worn by all persons whenever any one person in the laboratory is conducting an activity that involves a potential eye and face hazards. Activities that present potential eye and face hazards include, but are not limited to, work involving the following:

- hazardous [illegible]
- flying particles
- hot solids, liquids, or molten metals
- [illegible] sawing, forming, shaping, cutting, or stamping of any solid materials
- heat treatment, tempering, or kiln firing of any metal or other materials
- gas or electric welding
- potentially injurious light radiation

All protective eyewear in the laboratory must meet the ANSI Z87.1-2003 standard. Welding lens outputs must also meet the ANSI Z136.1-2007 standard. The below explanatory information and Appendix B (ANSI Z87.1-2003 Occupational and Educational Personal Eye and Face Protection Selection Chart) are intended to aid in identifying and selecting eye and face protection to match the hazard source.

Safety Glasses

Safety glasses provide eye and face protection from moderate impact and particle hazards associated with grinding, sawing, scaling, broken glass, minor chemical splashes, etc. Side protectors are required when there is a hazard from flying objects. Although safety glasses meeting the ANSI Z87.1-2003 standard provide adequate splash protection, splash goggles are an approved alternative for additional eye protection from chemical splash hazards.

Regular prescription eyeglasses (with or without side shields) and contact lenses are not a substitution for safety glasses or splash goggles. Contact lenses do not increase the risk in most laboratory environments. Use of contact lenses in the laboratory will be approved by the laboratory supervisor prior to commencing any activity involving potential eye or face hazards. Faculty and staff who wear prescription eyeglasses can find cost-effective solutions when obtaining a pair of prescription safety glasses. Faculty and staff may obtain prescription safety glasses through the Colgate Prescription Safety Glasses Program by contacting the EHSO. Students, faculty, and staff who do not obtain prescription safety glasses are to wear safety glasses (for impact hazards) or safety goggles (for splash hazards) designed to go over their prescription glasses.

Splash Goggles

Splash goggles provide adequate eye protection from hazards including potential chemical splash, use of concentrated corrosive material, and bulk chemical transfer. Goggles are

available with clear or tinted lenses, for protection against vented or non-vented impact hazards. The following with chemical splash hazards, ensure that goggles are rated for use with chemicals. Be aware that goggles designed for woodworking are [illegible] goggles can be identified by the numerous small holes throughout the face piece. In the event of a splash, the potential exists for chemicals to enter into the small holes resulting in a chemical exposure to the face.

Welder / Chipper Goggles

Welder goggles provide protection from flying sparks, metal spatter, chips, harmful radiant energy. Lenses are impact resistant and are available in graduated lens shades depending on the nature of the work. Minimum protective shade numbers based on the type of welding operations can be found in the OSHA 29 CFR 1910.133 *Eye and Face Protection* standard (see chart below).

Filter Lenses for Protection Against Radiant Energy

Welding Operations	Electrode Size (inches)	Arc Current (amps)	Minimum* Protective Shade
Shielded metal arc	<3/32	<60	7
	3/32 to 5/32	60 to 160	8
	4/32 to 1/4	160 to 250	10
	>1/4	250 to 550	11
Gas metal arc and flux cored arc welding		<60	7
		60 to 160	10
		160 to 250	10
		250 to 550	10
Gas Tungsten arc welding			
		50 to 150	8
		150 to 500	10
Air carbon arc cutting	(light)	<500	10
	(heavy)	500 to 1000	11
Plasma arc welding		<20	6
		20 to 100	8
		100 to 400	10
		400 to 800	11
Plasma arc cutting	(light)	<300	
	(medium)	300 to 400	
	(heavy)	400 to 800	
Torch brazing			
Torch soldering			2
Carbon arc welding			14

Welding Operations	Plate Thickness (inches)	Plate Thickness (mm)	Minimum* Protective Shade
Gas welding (light)	<1/8	<3.2	4
Gas welding (medium)	1/8 to ½	3.2 to 12.7	5
Gas welding (heavy)	> ½	>12.7	6
Oxygen cutting (light)	<1	< 25	3
Oxygen cutting (medium)	1 to 6	25 to 150	4
Oxygen cutting (heavy)	> 6	> 150	5

* As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade that gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

Face Shields

Face shields provide additional protection to the face, but not eyes, and must be used in combination with safety glasses or splash goggles. Face shields consist of an adjustable headgear and a face shield with either tinted or clear lenses, or a mesh wire screen. Face shields should be used in operations when the entire face needs protection from flying particles, metal sparks, liquids, cryogens, or chemical / biological splashes. Face shields are not a substitute for appropriate eyewear and should always be worn in conjunction with a primary form of protection such as safety glasses or goggles.

Welding Shields

Welding shields are similar in design to face shields but provide additional protection from radiant light, flying sparks, metal splatter, and slag chips encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding, and oxyacetylene welding and cutting operations. Equipment fitted with appropriate lenses are to be worn to protect against light radiation. Tinted and shaded lenses are not filter lenses unless they are marked or clearly identified as such.

Laser Eye Protection

A single pair of safety glasses is not available for protection from all laser outputs. The type of eye protection required for laser operation is dependent on the spectral frequency and specific wavelength of the laser sources. Contact the Coleman Safety Office for additional guidance on laser PPE selection.

Hand Protection

Gloves are to be used when handling hazardous chemicals in the laboratories. Typically, the requirements of the general laboratory hazard assessment should be followed. However, deviations may be made as outlined in the parameters of experiment specific laboratory hazard assessments. EHSO can provide guidance on appropriate hand protection in instructional and research settings. There is no one glove material that protects against all chemicals. It is important that the appropriate glove is used when handling chemicals. Consult chemical compatibility charts, MSDS and protective equipment manufacturer resources to aid in the selection of the proper glove and protection level based on the chemicals being handled. (Note: see Appendix C for a university approved manufacturer chemical compatibility chart). In situations involving extremely hazardous chemicals double gloves in combination with sleeve protectors and another chemically resistant PPE are recommended. The thin latex, vinyl, or nitrile gloves typical of lab work, are not appropriate for highly toxic chemicals or solvents. Gloves should always be inspected before use and replaced immediately if they are contaminated, punctured or torn. Gloves are to be removed before handling telephones,

doorknobs, computers, etc. Gloves shall also be removed before leaving the laboratory, with an exception being made for persons actively transporting chemical / biological material between labs. Persons transporting chemicals should either have a second person available to open / close doors for them, [illegible] door handles, elevator buttons, etc., while gloved. Nitrile gloves are the chemical / biological Glove protection is not required during the transport of chemicals in a lab cart, bottle carrier, or clean secondary container.

Colgate practices "Universal Precautions" for glove disposal. In practical terms, this means that ALL gloves will be treated as if they are contaminated for disposal purposes. There will be no separation of contaminated and non-contaminated gloves. Every laboratory is equipped with conveniently self-closing receptacles that are of such nature as to confine odor to the effective for glove waste disposal. The Universal Precaution glove disposal policy simplifies glove disposal, increases overall safety, and prevents inadvertent disposal of contaminated gloves in non-hazardous waste streams by custodial chemical contact. It should be noted that classroom and research gloves contaminated with biological materials must be separated from gloves contaminated with chemicals as hazardous waste. Biologically contaminated gloves will then be either autoclaved prior to disposal as a contaminated glove waste or sent out for disposal via the University's bio waste service provider.

Protective Clothing

Lab coats and lab aprons prevent skin contact exposure to chemicals by providing a protective barrier between the hazard and the laboratory user's body or work clothes. They extremities.

Lab Coats

Lab coats are to be used when handling hazardous chemicals in the laboratories. Typically, the requirements of the general laboratory hazard assessment should be followed. However, deviations may be made as outlined in the paragraph on experiment specific laboratory hazard assessments. EHSO can provide guidance on appropriate [illegible] research lab settings. Faculty, staff, and student lab coats are provided and maintained by the Colgate University's lab coats have the following protective qualities:

- Flame resistant fabric
- High tensile strength thread material
- NFPA 70E, HRC 2 compliant
- Arc Rated to 8 cal / cm^2
- Thermal and electrical arc hazard rated to ASTM 1506-02a standard
- Covered gripper snap front for quick and safe garment removal
- Covered gripper snap cuffs to prevent garment interference during chemical handling / experimentation work
- Light [illegible] soft fabric for [illegible]

- 42 inches in length for maximum skin exposure protection

Lab coats are maintained by [illegible] and, when necessary, by [illegible]. Lab coats will be cleaned by a qualified commercial laundry service provider at the end of each semester and at the end of the summer. Additional periodic removal and laundering of contaminated lab coats. Additional cleanings will be coordinated by the EHSO as necessary upon request. If a lab coat becomes contaminated or penetrated, or damaged, notify the laboratory manager for cleaning, contact the EHSO for replacement and, if disposal of the garment.

Lab Apron

Plastic or rubber lab aprons provide additional protection from skin contact exposure to chemicals, especially when working with liquid hazards and corrosive liquids. Lab aprons do not protect the user's extremities and should be used as an additional layer of protection, not a substitute, for a lab coat.

CAUTION

AUTHORIZED
PERSONNEL ONLY

This room contains hazardous materials.

In case of emergency
DIAL 911.

From cell phones: 315-228-7911.

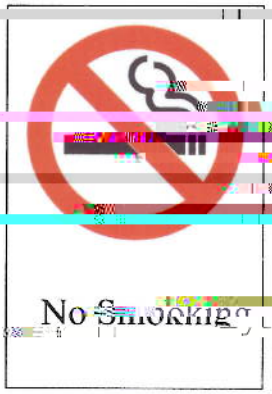
RESPONSIBLE PERSON: Dan Colgan

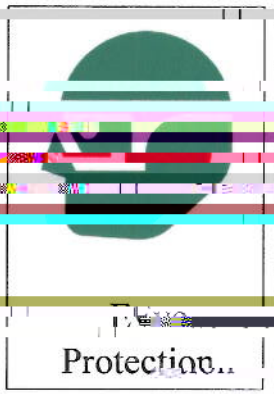
EMERGENCY CONTACT: Dan Colgan / Michelle Bragg

TELEPHONE: 315-[illegible]

LOCATION: McGregory Hall – Chemical Bunker #3


No Food or Drink


No Smoking


Protection


Protection


Flammable


Toxic

APPENDIX B

ANSI Z87.1-2003 *Occupational and Educational Personal Eye Protection Devices Selection Chart*

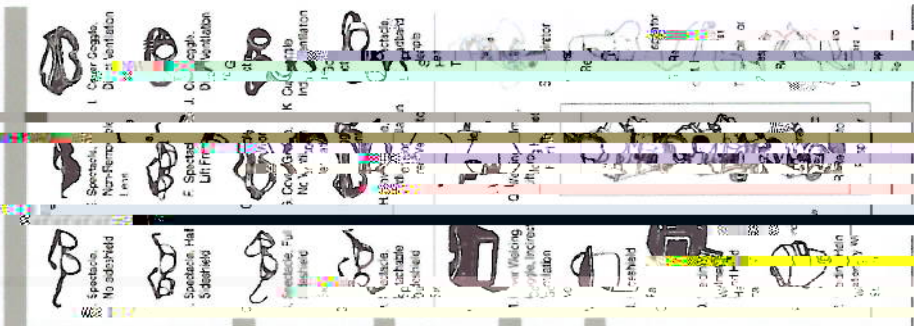
Selection Chart

Care shall be taken to recognize the possibility of multiple and simultaneous exposure to a variety of hazards. Adequate protection against the highest level of the hazards must be provided.

The illustrations shown are only representative of protective devices commonly available at this time. Protective devices do not need to take the forms shown, but must meet the requirements of the standard.

Protective Devices

Activity and Assessment	Protector Category and Styles	Limitations	Not Recommended
IMPACT			
Chipping, grinding, machining, masonry work, riveting, and sanding. Flying fragments, objects, large chips, particles, sand, dirt, etc.	[illegible]	Protective devices do not provide unlimited protection. Note: [illegible]	Protectors that do not provide protection from side exposure. [illegible]
HEAT			
Furnace operations, pouring, casting, hot dipping, gas cutting, and welding. [illegible]	[illegible]	Spectacles and cover type goggles do not provide unlimited facial protection. Operations involving heat may also involve optical radiation. Protection from both hazards shall be provided.	Protectors that do not provide protection from side exposure. [illegible]
CHEMICAL			
Acid and chemicals handling, degreasing, plating. Splash and irritating mists.	[illegible] For severe exposure, add N. Respirators R, T. [illegible] No ventilation. Respirators R, T.	Provides adequate protection from splash only with adequate ventilation. Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleaning may be required.	Spectacles, welding helmets, or hand shields [illegible]
DUST			
Woodworking, buffing, general dusty conditions. Nuisance dust.	[illegible]	Atmospheric conditions and the restricted ventilation of the protector can cause lenses to fog. Frequent cleaning may be required.	[illegible]
OPTICAL RADIATION			
[illegible]	[illegible] Welding helmets or Welding Shields: O, P, Q. [illegible] Welding goggles, Helmets, Welding Face Shields [illegible] Spectacles or Welding Faceshield over spectacles B, C. [illegible]	Protection from optical radiation is directly related to filter lens density. [illegible] Shaded or Special Purpose lenses, as suitable. [illegible]	Protectors that do not provide protection from optical radiation. [illegible]



APPENDIX C

Ansell 8th Edition Glove Chemical Resistance Guide

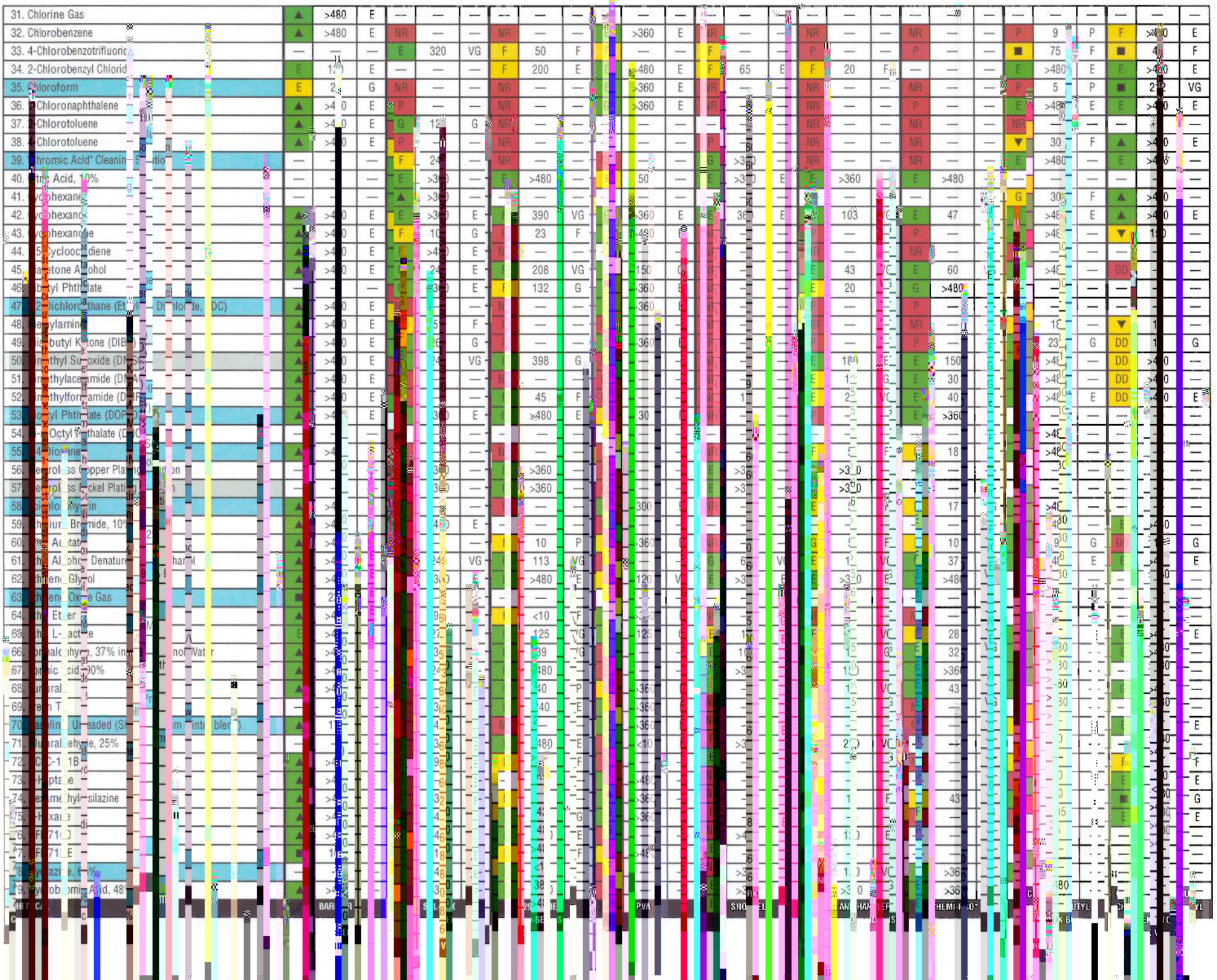
8th EDITION Permeation/Degradation Resistance Guide for Ansell Gloves

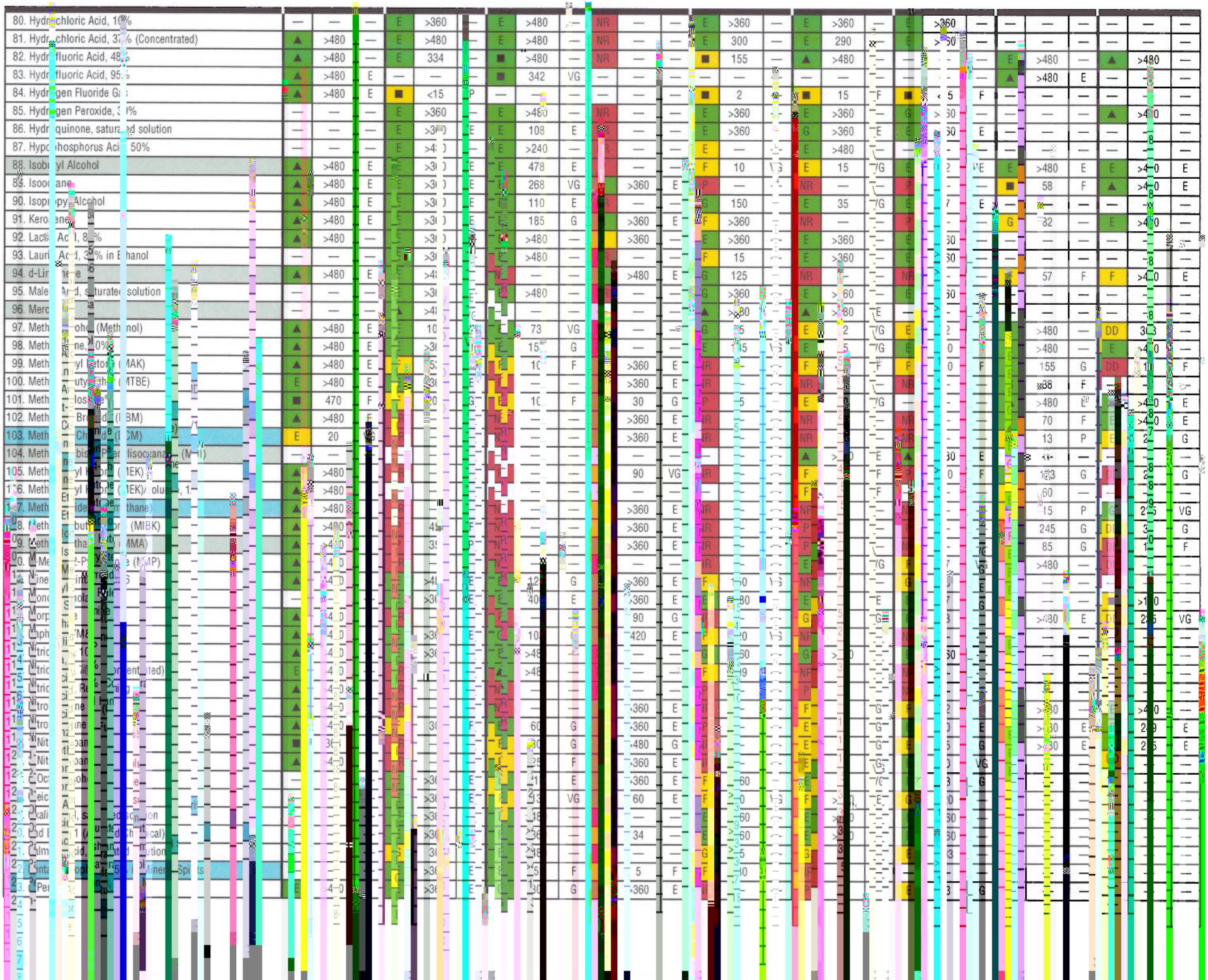
The [illegible] square in each column for [illegible] glove type is color-coded to provide an overall rating for both [illegible] Degradation and Permeation. The letter in each colored square [illegible] for Degradation [illegible]

- GREEN: The glove is very well suited for application with that chemical.
- YELLOW: The glove is suitable for that application under [illegible] control of its use.
- RED: Avoid use of the glove with this chemical.

SPECIAL [illegible] The [illegible] chemicals in this guide highlighted in [illegible] are [illegible] mental carcinogens according to [illegible] edition of [illegible] *Dangerous Properties of Industrial Materials* [illegible] chemicals highlighted in GRAY [illegible] experimental carcinogens [illegible] extremely high dosages, and other material [illegible] lesser risk of cancer.

CHEMICAL	Laminate Film Barrier™: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Nitrile Sol-Vex: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Unsupported Neoprene 29-Series: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Supported Polyvinyl Alcohol PVA: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Polyvinyl Chloride (Vinyl) Snorkel: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Natural Rubber Canners and Handlers™: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Neoprene/Natural Rubber Blend Chem-Pro®: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Butyl Unsupported Chemtek™ Butyl: Degradation Rating	Permeation: Breakthrough	Permeation: Rate	Viton/Butyl Unsupported Chemtek™ Viton/Butyl: Degradation Rating	Permeation: Breakthrough	Permeation: Rate
1. Acetaldehyde	■	[illegible]	E	P	[illegible]	—	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	NR	[illegible]	[illegible]	E	[illegible]	F	E	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]
2. Acetic A[illegible]	■	[illegible]	—	G	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	F	[illegible]	G	E	[illegible]	—	E	[illegible]	[illegible]	E	[illegible]	—	D	[illegible]	[illegible]
3. Acetone	▲	[illegible]	E	NR	[illegible]	—	[illegible]	[illegible]	F	[illegible]	43	[illegible]	NR	[illegible]	[illegible]	E	[illegible]	[illegible]	G	[illegible]	[illegible]	E	[illegible]	E	D	33	[illegible]
4. Aceton[illegible]	▲	[illegible]	E	F	50	F	[illegible]	20	VG	[illegible]	150	[illegible]	NR	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	D	70	[illegible]
5. Acr[illegible]	[illegible]	[illegible]	—	G	20	—	[illegible]	39	—	[illegible]	[illegible]	[illegible]	NR	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]
6. Acr[illegible]	[illegible]	[illegible]	E	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	—	[illegible]	[illegible]	[illegible]
7. Ally[illegible]	[illegible]	[illegible]	E	F	40	F	[illegible]	145	VG	[illegible]	[illegible]	[illegible]	P	[illegible]	G	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	—	[illegible]	[illegible]	[illegible]
8. Ammon[illegible]	[illegible]	[illegible]	[illegible]	▲	[illegible]	E	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9. Ammon[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	E	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10. Ammon[illegible] 30% Ammonia	[illegible]	[illegible]	[illegible]	E	[illegible]	—	[illegible]	250	—	[illegible]	[illegible]	[illegible]	E	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
11. n-Amyl [illegible]	[illegible]	[illegible]	[illegible]	E	98	G	NR	[illegible]	—	[illegible]	360	[illegible]	P	[illegible]	[illegible]	NR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	G	[illegible]	10	[illegible]
12. Am[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	340	VG	[illegible]	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
13. Ani[illegible]	[illegible]	[illegible]	[illegible]	NR	[illegible]	—	[illegible]	14	F	[illegible]	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
14. Aqu[illegible]	[illegible]	[illegible]	[illegible]	F	360	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	G	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
15. Ben[illegible]	[illegible]	[illegible]	[illegible]	NR	[illegible]	—	[illegible]	5	—	[illegible]	360	[illegible]	NR	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
16. Ben[illegible]	[illegible]	[illegible]	[illegible]	P	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	360	[illegible]	NR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	F	[illegible]	103	V
17. Ben[illegible]	[illegible]	[illegible]	[illegible]	E	80	E	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	[illegible]
18. Ben[illegible]	[illegible]	[illegible]	[illegible]	E	70	G	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
19. Bromin[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	80	E	[illegible]	[illegible]	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
20. 1-Brom[illegible]	[illegible]	[illegible]	[illegible]	▼	3	F	[illegible]	<1	P	[illegible]	[illegible]	[illegible]	▼	<1	[illegible]	▼	<1	[illegible]	[illegible]	[illegible]	[illegible]	▼	[illegible]	P	[illegible]	[illegible]	V
21. 2-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20	—	[illegible]	46	—	[illegible]	[illegible]	[illegible]	G	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	18	[illegible]
22. n-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5	F	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]	NR	[illegible]	[illegible]	NR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	G	[illegible]	[illegible]	[illegible]
23. n-[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	360	E	[illegible]	270	E	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
24. B[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	123	E	[illegible]	18	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	VG	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	480	[illegible]
25. B[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	70	VG	[illegible]	180	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	VG	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	—	[illegible]	[illegible]	[illegible]
26. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	248	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	[illegible]	[illegible]
27. C[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	F	[illegible]	0	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	▼	7	G	[illegible]	[illegible]	[illegible]
28. C[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	50	G	[illegible]	5	—	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F	3	P	[illegible]	138	[illegible]
29. C[illegible] [illegible]xyethanol [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	93	G	[illegible]	12	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	D	[illegible]	[illegible]
30. C[illegible] Acetate, EGE	[illegible]	[illegible]	[illegible]	[illegible]	0	G	[illegible]	40	F	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	G	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	E	[illegible]	E	[illegible]	465	[illegible]




80. Hydrochloric Acid, 10%
81. Hydrochloric Acid, 37% (Concentrated)
82. Hydrofluoric Acid, 48%
83. Hydrofluoric Acid, 95%
84. Hydrogen Fluoride Gas
85. Hydrogen Peroxide, 30%
86. Hydroquinone, saturated solution
87. Hypophosphorus Acid, 50%
88. Isobutyl Alcohol
89. Isooctane
90. Isopropyl Alcohol
91. Kerosene
92. Lactic Acid, 85%
93. Lauric Acid, 35% in Ethanol
94. d-Limonene
95. Maleic Acid, saturated solution
96. Mercury
97. Methanol
98. Methylene Chloride
99. Methyl Amyl Ketone (MAK)
100. Methyl tert-Butyl Ether (MTBE)
101. Methyl Cellosolve
102. Methyl n-Butyl Ketone (MBM)
103. Methylene Chloride (DCM)
104. Methylene bis(4-Phenylisocyanate) (MDI)
105. Methyl Ethyl Ketone (MEK)
106. Methyl Ethyl Ketone (MEK)/Toluene, 1:1
107. Methylene Chloride
108. Methyl Isobutyl Ketone (MIBK)
109. Methyl Methacrylate (MMA)
110. N-Methyl-2-Pyrrolidone (NMP)
111. Naphthalene
112. Nitric Acid, 5%
113. Nitric Acid, 20%
114. Nitric Acid, 70%
115. Nitrobenzene
116. Nitrotoluene
117. Octanol
118. Oleic Acid
119. Potassium Hydroxide, 50%
120. Sodium Hydroxide, 50%
121. Stoddard Solvent
122. Perchloroethylene