

Safety

Toronto Brigantine Inc



Safety is our #1 Priority

2

Clothing

- Your work clothes should be durable, comfortable and should fit well
- Clothes that are too baggy or ill fitted have a tendency to get caught in machinery or may cause you to trip and fall
- Natural fibres in your clothes are better than synthetic fibres. Natural fibres are highly absorbent, durable and comfortable. When touched by fire, synthetic fibres melt and cling to the skin underneath.

3

Hair and Jewellery

- Long hair should be tied back, jewellery and scarves should be removed

4



Footwear



- Steel toed boots or shoes are recommended while you are working in the shop
- Leather boots or shoes with thick sturdy soles are acceptable for some jobs
- For your comfort and protection it is best to have heavy knit socks



Protecting your Head

- “Always wear a hard hat when you are exposed to work overhead, to moving objects, or to the possibility of falling objects”
- Wearing a hard hat is not always practical on board.
- When light work such as furling or mouseing is being done aloft try to make sure that no one is working below you.
- When heavy work is being done such as crossing or striking yards people are forbidden from working or crossing beneath the work area. If a yard or topmast falls, a hard hat won't help much
- **All tools that are used aloft must be on lanyards**

6

Eye and Face Protection

- Proper eye or face protection, or both, should be worn when there is a chance you will be exposed to flying particles or splashed chemicals. You can wear safety glasses, goggles, or a full face shield.
- Even if you wear prescription glasses you should also wear safety glasses/goggles. Safety glasses have strong frames and side shields, and their lenses are shatter-proof.
- Face shields protect your face from flying chips of wood, metal and plastic, or from dust, abrasives, acids and caustics. When a job calls for full face protection, you must wear a face shield as well as safety glasses or goggles
- Make sure that the eye protection you are using is clean and you can see through it
- You should know where your eye wash station is located



7

Contact Lenses

- Contact lenses should not be worn in dusty environments or when you are working with chemicals.
- This basically means contacts should not be worn whenever you are in the shop.
- Chemicals and dust can get trapped behind your contacts causing permanent damage to your eyes.

8

Hand and Arm protection

- Gloves should **not** be worn when using machinery with moving parts. The material can get caught in the machinery and pull your hand in.
- Wear leather or vinyl-coated gloves when you handle rough boards, rough metal and sharp objects
- Wear rubber or plastic-treated gloves when you handle acid, caustics, paints or cleaning solvents. Such gloves help protect you from being burned and absorbing chemicals through your skin
- Gloves should be worn when using a grinder to prevent burns from the sparks.



9



Hearing Protection



- You must guard yourself against very loud, prolonged noise or sharp, impact noise, as both can permanently damage your hearing. Only ear muffs or plugs reduce noise to a tolerable level.
- If you will be exposed to excessive noise levels, you must be provided with hearing protection, and you must wear this protection
- If a job requires you to wear muff-type protectors, be sure that your hair and personal apparel do not interfere with the seal the protectors provide around your ears.
- **You are prohibited from wearing muff-type hearing protectors that have been designed or modified to accept music-radio, taped or otherwise.**

10

Breathing Protection



- Working in a well ventilated area is always advised. If it is nice outside do your sanding or painting on the surface instead of in the shop if possible.
- If you blow your nose at the end of the day and your snot is brown or black, it means you should have been wearing a dust mask. The fine dust from many tropical hardwoods such as teak is carcinogenic and should not be breathed in.

11

Dust mask Vs Chemical mask

- Two types of breathing protection: Dust mask, Chemical Mask
- A dust mask is made of a light, porous material, fine enough to filter out dust and fibres. You must wear one when you work around fiberglass and asbestos, or in dusty conditions.
- A chemical mask contains a chemical cartridge which filters out toxic fumes or vapors from a specific substance. For example, one type of cartridge filters paint spray and solvents; another filters only ammonia.
 - The chemical cartridges come sealed. They only are effective for about 10 hours after the package has been opened. If you pick up a chemical mask from the shelf you should grab a new set of cartridges for it, for each work day.



12

Your Safety Equipment!

Each Trainee Needs to Bring:

- Reusable Work gloves
- Eye protection
- Ear protection, a pair of ear protectors
- Heavy work shoes/boots (preferably with a composite safety toe)
- Work clothes, preferably of natural materials.
- Don't forget layers such as long underwear and such, it gets cold by the water in winter.

In addition to Trainee needs, each Officer Needs to Bring:

- Painting mask. (Please ask the Captains as to the make/model. We need to standardize so only one type of cartridge needs to be purchased.)

13

TBI's Safety Equipment

TBI will Supply:

- latex/nitrile/vinyl gloves
- First aid kits
- Dust Masks
- disposable ear buds

14

Shop Cleanliness

- A clean shop is a safe shop (no tripping hazards, you can find things when you need them)
- Clean and put away all the tools you used for your job (when the job is finished or at the end of the day). Tools should be put in the proper drawer/shelf, not just where you found them. If you don't know where it should go, ask an officer.
- All damaged or unsafe equipment should be reported to the safety officer or Executive Officer.
- At the end of the day each worker should:
 - Clean up debris and garbage
 - When your work area is clean help others clean up common work spaces (sweeping floors, cleaning work benches)
 - Do not leave the shop until the captain, or Senior Officer has had a chance to speak to the group

15

Working with Paints and Solvents

- Read the MSDS sheet for the Chemicals you will be using, including the MSDS for the solvent that will be required to clean up afterwards
 - The MSDS sheet will tell you the appropriate safety equipment to be worn
 - Be aware of the first aid procedures for that chemical
- Inform others working in the area about what you are working with and if they will also need safety equipment (chemical mask)
- If the paint/epoxy you are working with comes in two parts make sure you ask someone how to mix the appropriate ratio.

16

Finished Painting?

- Once the job is finished make sure that you clean up!!!
 - Dispose of any excess product in appropriately labelled containers
 - Clean your brushes using the appropriate solvent
 - Under no circumstances should any paint or solvent be poured into the lake or down the drain in the shop or heads. **We eventually drink that water!**
 - Solvent used for cleaning brushes should be appropriately labelled and stored in the chemical cabinet
 - Paint cans should be returned to the chemical cabinet
 - Do not leave “mystery chemicals” lying around in unlabelled open containers (eg varsol you used to clean your varnish brush)

17

Other safety Tips

- Make sure your work area is well lit
- Put oily rags and other used combustible materials in a covered metal container
- Be sure electrical cords do not pose a tripping hazard
- Keep paints, chemicals and other flammable substances in approved metal storage cabinets
- Look for signs that alert you to hazards
- Clean portable equipment before you store it
- Do not allow tools to project over the edge of a table or bench
- Avoid moving backwards when you carry a heavy load. If you must step back, check the area for hazards before you do so.
- Do not use machinery with unguarded or inadequately guarded moving parts

18

How to Work Effectively and Safely in the Shop

- If you are unsure about anything, ASK
- Do not use any power tools unless you have been trained to use them and you have been signed off on your Winter program Grade sheet
- Take your work seriously
- Don't cut corners to save time
- Take pride in what you are doing

19

Shop Muster Station

- The muster station for the shop and boats is at the phone booth above the shop.

20

Working Safely on the Boats in Winter

- Beware of icy and slippery decks
- Have your hands free when stepping on or off the boats
- Ladders can be wet and slippery
- If you are using heaters down below make sure there are no flammable materials near them
- Wear lots of layers to stay warm and protect your hands and feet from frostbite

21

What to do in case of Fire

- If you are the first to notice a fire, yell FIRE
- Person closest to the shop bell will begin continuously ringing it
- Everyone will proceed to the muster station on the surface (the phone booth)
- ON/OD will bring the sign in/sign out sheet and MSDS binder to the surface and if possible do one final sweep of the area to insure that everyone is out.
- Fire department/EMS will be called
- People working on the boats will be told to proceed to the muster station
- Roll-call will be done to ensure everyone is out of the area of the fire

22

Chemical Spill

- Should be treated the same as a fire
- Bring the MSDS binder to the surface so that you can inform the fire department what chemical they are dealing with
- This could include:
 - A battery breaking open (Sulphuric Acid)
 - Paint or solvent spill
 - Cleaners
- Due to the enclosed nature of the shop any chemical spills are of potential concern

23

What to do in case of Medical Emergency

- An officer will go to the surface and call 911, they will stay on the surface to direct EMS when they arrive
- Start First-aid
- All trainees and officers not assisting with first-aid will proceed to the muster station
- ON/OD will bring sign in/sign out sheet and do a roll-call

24

- **Shop Address: 539 Queens Quay West**
- Have an officer on the surface to meet any emergency crews, and then direct them to where the actual emergency is.
- **Important Numbers:**
- 911
- Police 14 Division: 416-808-1400
- Police Marine Unit:416-808-5800
- Also VHF CH16, or the Police on CH12 (call “Metro Marine”)

25

Occupational Health & Safety

- Part of the Canada Labour Code

26

Occupation Health and Safety Legislation

Outlines:

- Supervisors responsibilities
 - joint health & safety committee
 - safe work practices
- Workers responsibilities and rights
 - right to refuse unsafe work
 - right to know about workplace hazards
 - right to participate in health and safety committee

27

Supervisor’s Responsibilities

- Supervisor is:
 - competent
- Qualified by:
 - knowledge
 - training
 - experience
- Familiar with acts, regulations
- Know about potential and actual hazards

—Ignorance is not a defence—

28

- **Every employer shall ensure that the safety and health at work of every person employed by the employer is protected.**

Canada Labour Code, Part II Sec.124.

29

Other Responsibilities of the Supervisor

- **Prepare, review and maintain** health and safety policy
- **Establish** joint health and safety committee
- **Respond** to recommendations of the Health and Safety Committee
- **Provide** information, instruction and supervision to ensure employee health and safety
- **Meet** prescribed standards
- **Provide/maintain** personal protective equipment
- **Investigate and report** accidents and illnesses
- **Control** exposure to safety hazards and hazardous substances
- **Appoint** competent person as supervisor
- **Establish** an occupational health service
- **Post** a copy of Act in the workplace

30

You The Workers... Have Responsibilities Too!

- **Work** in compliance with Act and regulations
- **Follow** safety procedures and use safety equipment provided
- **Report** to your supervisor any contravention of the Act, hazardous conditions and accidents
- **Do not act** in a way that endangers fellow worker's health and safety
- **Do not alter** or make ineffective any equipment or device that might endanger other workers

31

Worker's Rights

Three Important Rights

1. Right to know
2. Right to participate
3. Right to refuse unsafe work

32

1. Right to Know

- What hazards are present on the job
- How these hazards affect workers
- Health and safety training

33

2. Right to Participate

- Participate in joint health and safety committees
- Report unsafe practices and conditions

34

3. Right to Refuse Unsafe Work

- Can refuse dangerous work

35

Joint Health and Safety Committee

- **Allow** equal employer/employee members
- **Meet** regularly (Ontario every 3 months, Federal every month)
- **Deal** with worker health and safety concerns
- **Participate** in identifying risks
- **Perform** routine workplace inspections
- **Resolve** work refusals

36

Discrimination Against Workers Prohibited

- No employer or supervisor shall take discriminatory action against a worker for exercising his/her rights under health and safety legislation.

37

Ask your Supervisor:

- What are the potential hazards on the job?
- Do I get safety training?
- What safety equipment do I need to do my job?
- Do I need to wear personal protective equipment?
- What do I do in case of fire or emergency?
- How do I get First Aid if I am injured?
- What are my responsibilities regarding the health and safety of myself and my co-workers?
- If I notice something wrong, to whom should I report?

38

If you are a Supervisor

- **Explain** the importance of health and safety to all employees
- **Implement** safe work practices
- **Praise** for safe behaviour
- **Solicit** for participation of all employees
- **Reward** for participation
- **Be** a shining example
- **Promote** safety by providing books, videos, etc.
- **Visit** work areas regularly
- **Improve** and simplify safe work practices continuously
- **Learn** the names of employees

39

WHMIS



40

What is WHMIS

- Workplace Hazardous Materials Information System
 - Hazard communication standard
 - Provides information on how to safely work with hazardous chemicals (controlled substances)

What are some Controlled Substances on the boats?

41

The WHMIS Program

- Ensure that workers understand information on material safety data sheets (MSDS), supplier labels, and workplace labels
- Provide training in specific safe work procedures to workers who work with or near controlled products
- Ensure that all containers of controlled products in their workplace have MSDS and WHMIS labels
- Ensure that MSDS are readily accessible to workers

42

Can you Identify any of these symbols?



43

Classes of Chemicals

- Class A: Compressed Gas
- Class B: Flammable and Combustible material
- Class C: Oxidizing Material
- Class D: Poisonous and Infectious Material
- Class E: Corrosive Material
- Class F: Dangerously Reactive Material

44

Class A: Compressed Gas



- Compressed gases, dissolved gases, and gases liquefied by compression or refrigeration
- Pressure in container is greater than 40psi
- Cylinder may explode if exposed to heat or physical shock

45

Class B: Flammable and Combustible material



- Solids, liquids, and gases capable of catching fire in the presence of a spark or open flame under normal working conditions

46

Class B divisions

- **Division 1:** Flammable gases - compressed gases that form flammable mixtures in air * Name one found on the boats*
- **Division 2:** Flammable liquids - liquids that have flash points below 37.8C
- **Division 3:** Combustible liquids - liquids that have flash points of 37.8C or more but less than 93.3C
- **Division 4:** Flammable solids - usually metals, ability to cause fire through friction or ignite and burn so vigorously and persistently that they create a hazard
- **Division 5:** Flammable aerosols - packaged in aerosol containers, may catch fire *Name one found on the boats*
- **Division 6:** Reactive flammable materials - react by either spontaneously creating heat or catching fire under normal conditions of use or in contact with air or water

47




Class C: Oxidizing Material



- increased risk of fire if it comes in contact with flammable or combustible materials

48

Class D: Poisonous and Infectious Material

- Division 1: Materials causing immediate and serious toxic effects - cause death or immediate injury when a person exposed to small amounts 
- Division 2: Materials causing other toxic effects - life-threatening and serious long-term health problems as well as less severe but immediate reactions in a person who is repeatedly exposed to small amounts (NOTE: Bar rust, pre-prime, some bottom paints, anything with lead in it) 
- Division 3: Biohazardous infectious material 

Class E: Corrosive Material



- Caustic and acid materials that can destroy skin or eat through metals

50

Class F: Dangerously Reactive Material



- may self-react dangerously upon standing or when exposed to physical shock or to increased pressure or temperature, or they emit toxic gases when exposed to water

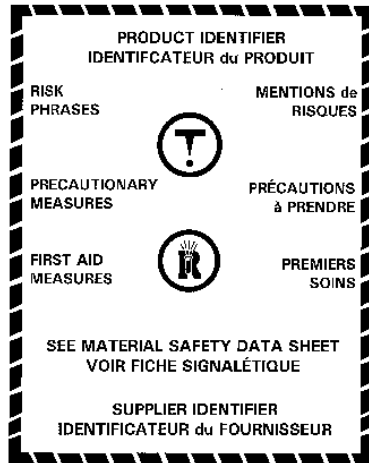
51

WHMIS Labels

- All “controlled products” need WHMIS labels and MSDS. Most will already be labelled. If the label has been obscured (by paint, for example) or the product has been transferred into another container, then we need to put a new label on with:
 - Product identifier
 - Specific safe handling info and personal protective clothing and equip required
 - Reference to MSDS

52

Example Label



53

MSDS Sheets

- These provide specific hazard info, safety handling info, and emergency procedures for controlled products, and must be available to workers upon request.
- MSDS sheets can be found in Orange binders in the shop and on each of the boats
- Have a look at the Varsol MSDS sheet

54

What is on an MSDS sheet?

- **Product info** - product, manufacturer, supplier, intended use, contact info for manufacturer and supplier
- **Hazardous ingredients** - lists specific chemical names, percentages, acute toxicity data
- **Physical data** - general info on physical and chemical properties
- **Fire and explosion hazard** - lists conditions under which product may catch fire or explode, as well as info for developing procedures to deal with that occurrence
- **Reactivity data** - lists conditions and other substances that should be avoided to prevent dangerous reactions
- **Toxicological properties** - how substance enters body, possible health effects from single and repeated exposure, long term health effects
- **Preventative measures** - required protective equipment, how to safely clean up, use, handle, store, transport or dispose of the product.
- **First aid measures** - specific instructions for immediate treatment of worker who has inhaled or swallowed product or who has had skin or eye contact
- **Preparation info** - the date the MSDS was prepared and by who

55



Material Safety Data Sheet and Safe Handling and Disposal Information

Section 1. Chemical Product and Company Identification

Product name ZEP AZTECH (CHLORINE BLEACH)
Product Use Laundry Chlorine Bleach
Product Code 1322
Date of issue 08/02/06 **Supersedes** 09/09/03

Emergency Telephone Numbers For MSDS Information:
 Technical Services Group
 Zep Manufacturing of Canada
 Telephone: (780) 453-8100 (Business Hours 8:00-5:00)

For a Medical or Transportation Emergency:
 CANUTEC (24 Hours)
 (613) 996-6666 - Call Collect

Prepared by Technical Services Group
 Zep Manufacturing Co. of Canada
 11627 178th Street
 Edmonton, Alberta T5S 1N6

Printing date: 03/08/06

Date of Preparation : 08/02/06

Section 2. Composition, Information on Ingredients

Name of Hazardous Ingredients	CAS #	% by Weight	Toxicity Data			
SODIUM DICHLORO-s-TRIAZINETRIONE, DIHYDRATE; sodium dichlorocyanurate dihydrat	51580-86-0	7 - 13	LD50	Rat.	Oral	620 mg/kg
			LD50	Rabbit	Dermal	11000 mg/kg

Section 3. Hazards Identification

Acute Effects **Routes of Entry** Dermal contact. Eye contact. Inhalation. Ingestion.
Skin Hazardous in case of skin contact (corrosive). The amount of tissue damage depends on length of contact. Skin contact can produce inflammation and blistering. Skin contact may produce burns.
Eyes Hazardous in case of eye contact (irritant). Corrosive to eyes. Eye contact can result in corneal damage or blindness.
Inhalation Hazardous in case of inhalation. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing.
Ingestion May be fatal if swallowed. May cause burns to mouth, throat and stomach.

Chronic Effects Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Additional information : See Toxicological Information (section 11)

Section 4. First Aid Measures

Eye Contact Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin Contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately.
Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If affected person is conscious, give plenty of water to drink. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flash Point Not applicable **Flammable Limits** Not applicable
Flammability Not applicable
Auto-ignition Temperature
Fire-Fighting Procedures Cool containers with flooding amounts of water from as far a distance as possible. Do not fight fire with Dry chemical extinguisher (ABC or BC). Wear special protective clothing and positive pressure, self-contained breathing apparatus.
Fire Hazard May release dangerous gases (chlorine). Oxidizing material. Substance releases oxygen when heated, which may increase the severity of an existing fire.
Products of Combustion Chlorine and nitrogen trichloride.
Explosion hazard

Section 6. Accidental Release Measures

Spill Clean up Put on appropriate personal protective equipment (see Section 8). Keep water away from release. Use appropriate tools to put the spilled solid in a convenient waste disposal container. Place in suitable clean, dry containers for disposal by approved methods. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Section 7. Handling and Storage

Handling Do not get in eyes, on skin, or on clothing. Do not breathe dust. Do not ingest. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Do not mix with or use with other products. Never add water to this product. Wash contaminated clothing before reusing.

Storage Contains moisture sensitive material; store in a dry place. Keep container tightly closed and dry. Keep container in a cool, well-ventilated area. Store between 40°F - 120°F (4.4°C - 49°C). Keep away from incompatibles. Keep out of the reach of children.

Section 8. Exposure Controls, Personal Protection

Engineering Controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection

Eyes Splash goggles.

Hands and Body Rubber gloves. Neoprene gloves. Chemical resistant apron.

Respiratory Avoid the inhalation of dust and particulates arising from the application of this preparation. Wear appropriate respirator when ventilation is inadequate.

Protective Clothing (Pictograms)**Exposure Limits****Name of Hazardous Ingredients**

Sodium Dichloro-s-Triazinetrione, Dihydrate

CAS #

51580-86-0

Exposure Limits**OSHA (United States).**TWA: 15 mg/m³ 8 hour(s). Form: TotalTWA: 5 mg/m³ 8 hour(s). Form: Respirable

[Consult local authorities for acceptable exposure limits.](#)

Section 9. Physical and Chemical Properties

Physical State Granular solid.

pH 7.0 - 8.0 (1% Solution)

Boiling Point Not applicable

Freezing Point Not available.

Specific Gravity Not applicable

Solubility 1.0 lb/gl

Color White.

Odor Mild. Chlorine.

Vapor Pressure Not applicable

Vapor Density Not applicable

Evaporation Rate Not applicable

VOC (Consumer) Not applicable

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility Keep away from heat and direct sunlight. Reactive with ammonia, acids and organic materials..

Reactivity Will not occur.

Hazardous Decomposition Products Chlorine and nitrogen trichloride.

Section 11. Toxicological Information

Carcinogenic Effects Ingredients: Not listed as carcinogen by OSHA, NTP or IARC.

Reproductive Effects

Mutagenic Effects

Teratogenic Effects

Section 12. Ecological Information

Ecotoxicity Not available.

Biodegradable/OECD Not available.

Section 13. Disposal Considerations

Waste Information Waste must be disposed according to applicable regulations. Consult your local or regional authorities.

Waste Stream Code: D001, D003
Classification: - (Hazardous waste.)
Origin: - (RCRA waste.)

Section 14. Transport Information

Regulatory Information	UN number	Proper shipping name	Class	Packing Group	Label	Additional information
TDG Classification	Not regulated.	-	-			

Limited Quantity: Small quantities of controlled goods are not regulated as Dangerous Goods according to the TDG regulations.

Section 15. Regulatory Information**WHMIS (Canada)**

Class C: Oxidizing material.

Class D-1B: Material causing immediate and serious toxic effects (TOXIC).

Class E: Corrosive solid.

Other Regulations

Not available.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the available information required by the CPR.

Section 16. Other Information

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.