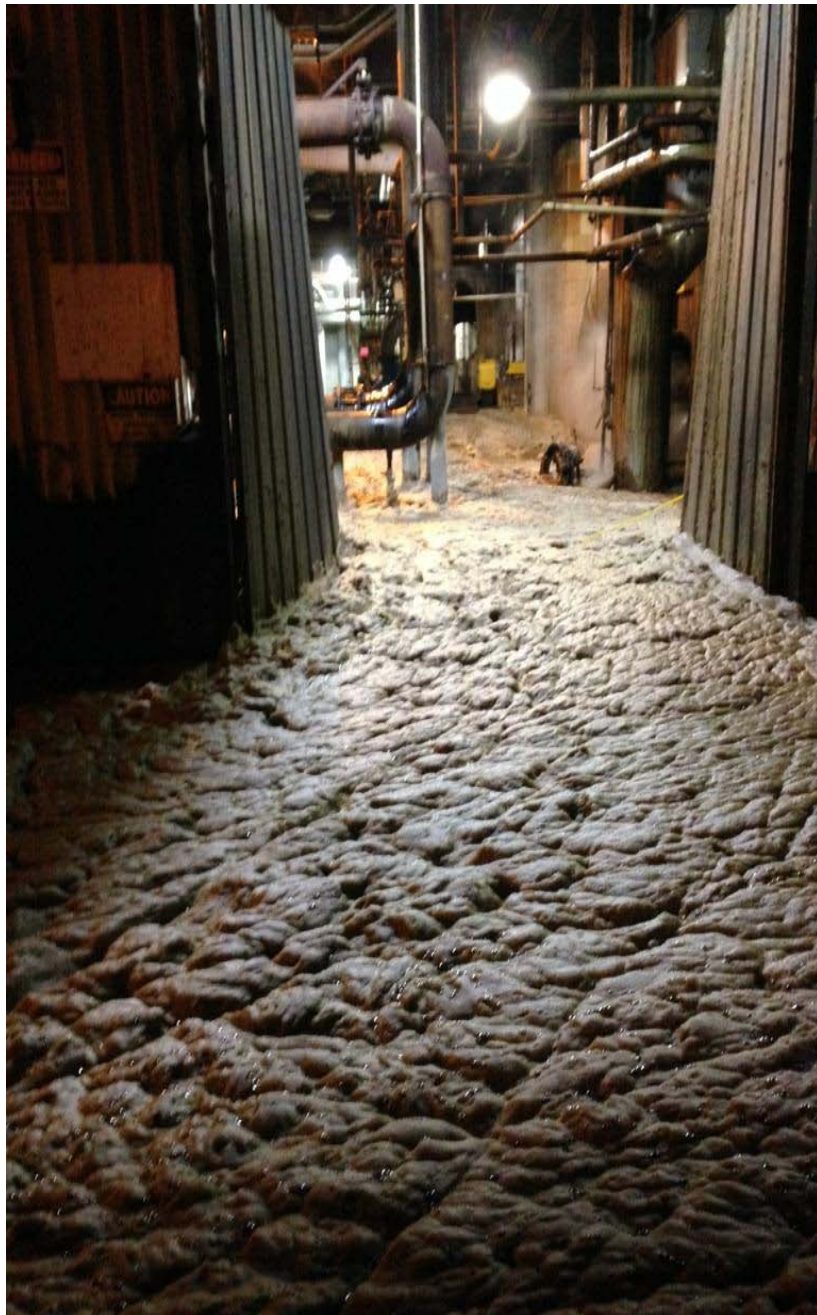




**DEFOAMER & PITCH DISPERSANT
SAFETY & HANDLING
SKOOKUMCHUCK 2014
MICHAEL KJERULF**



Outline

Defoamers

Pitch Dispersants

Product Safety

PPE

Chemical Defoamer Types

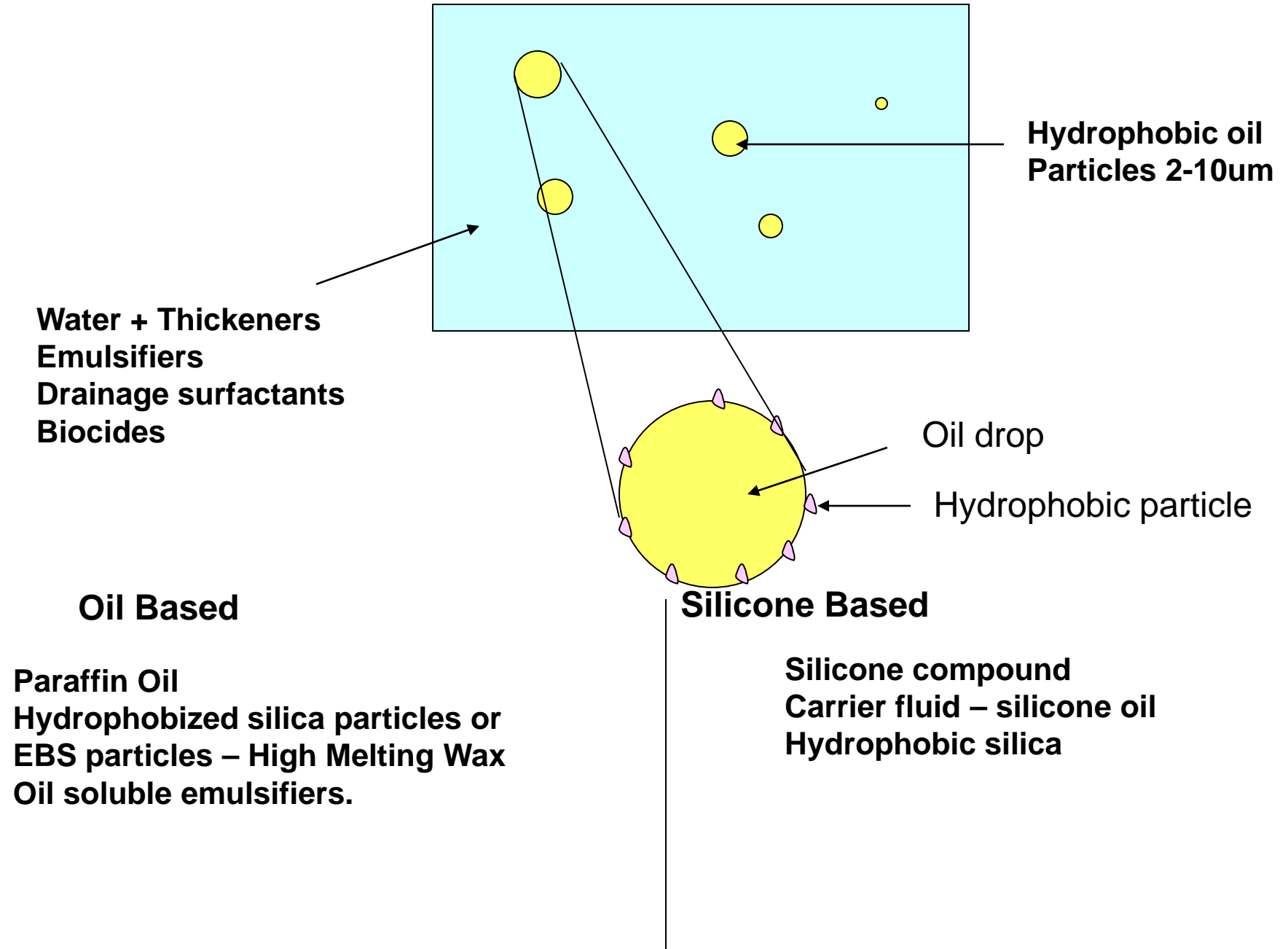
Oil Based - hydrocarbon oil carrier with EBS (amide) or silica particulate. Older technology. Newer products may be water extended. Older generation prone to deposits

Silicone Emulsion - stabilized silica particulate in silicone oil carrier, emulsified in water. May contain various silicone compounds for drainage. Common modern type of defoamer.

Water Based- fatty alcohol C12-C14 in a water carrier.
Effective at lower temperatures

Surfactant- Concentrates

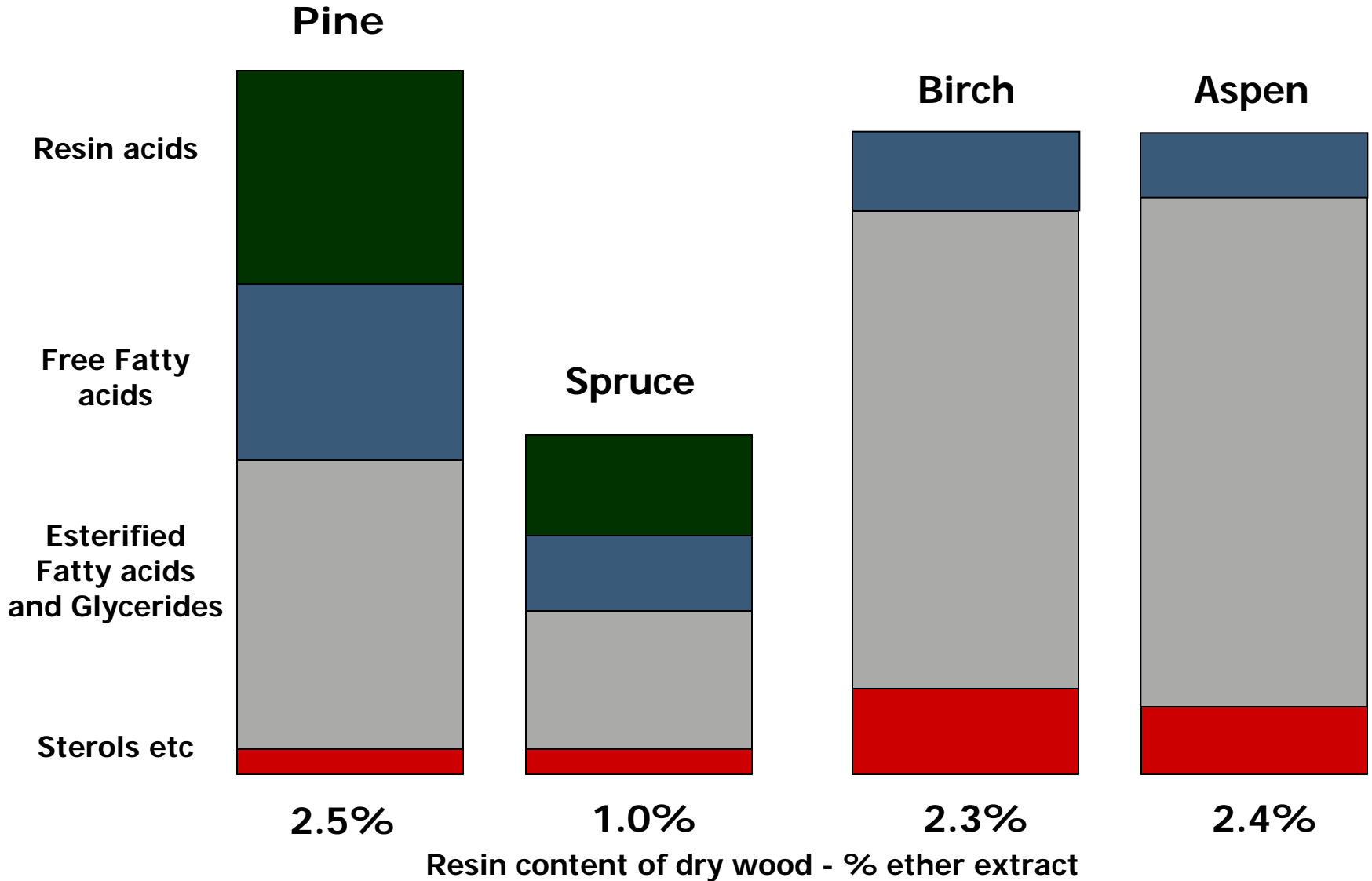
ANATOMY OF AN EMULSION DEFOAMER



What is Pitch?

- “Pitch” - is the collective term used to describe the **hydrophobic wood resin** materials found in the wood which “appear” in the Pulp process
- Resin - is a natural organic component of all trees
 - it functions as an energy storage source (fats) and a defense mechanism against disease and insects
 - it typically occurs in “free flowing” resin canals (most softwoods and some tropical hardwoods) and as a storage inclusion in parenchyma cells (predominant resin source in most hardwoods)
 - it makes up (typically) 1 to 6% of the wood volume (DCM extract), with higher concentrations in the bark and the heartwood (esp. in older trees)

Wood Chemistry – Extractives Detail



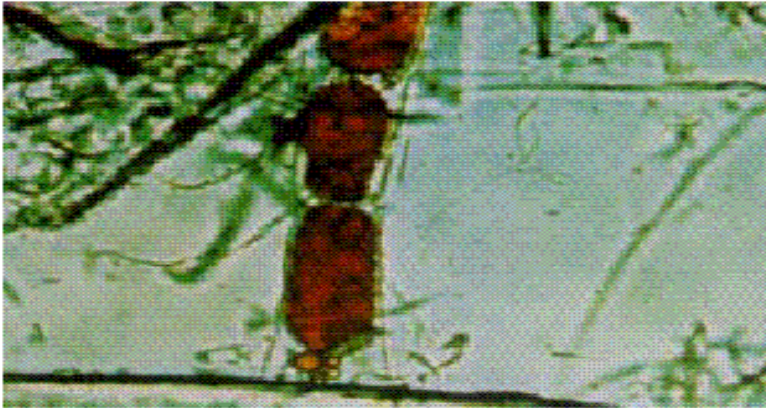


Figure 2.3-1: Encapsulated Pitch Within Fiber

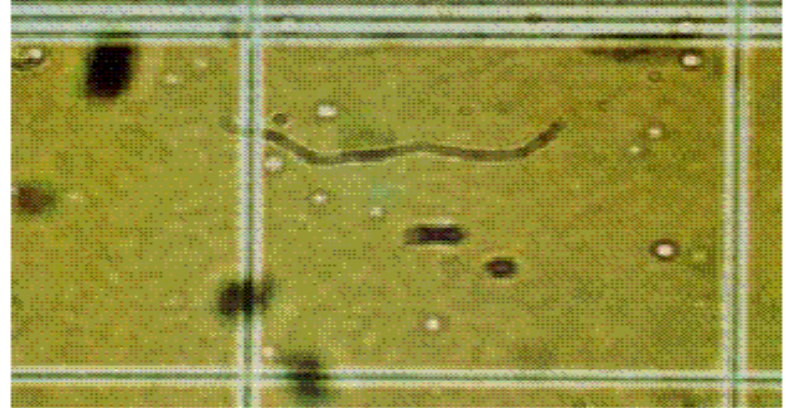


Figure 2.3-2: Free Colloidal Pitch

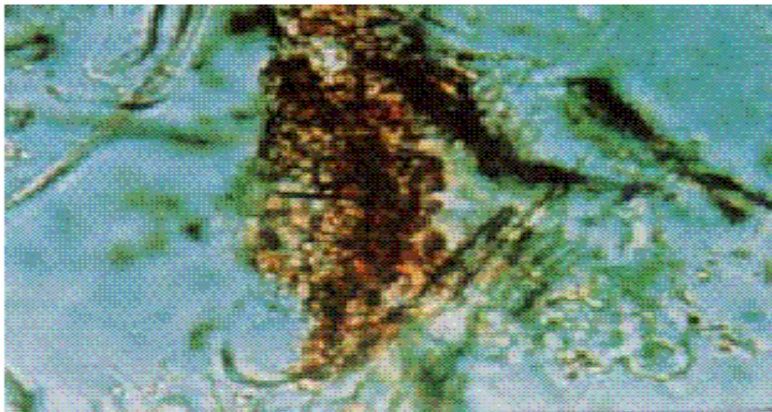


Figure 2.3-3: Aggregated Pitch in Water Phase

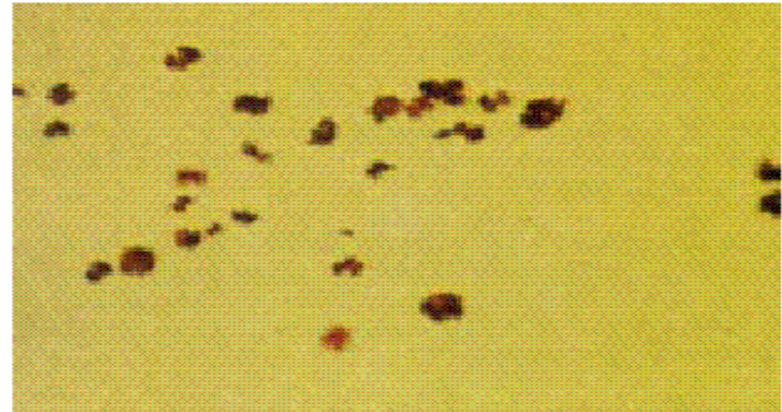


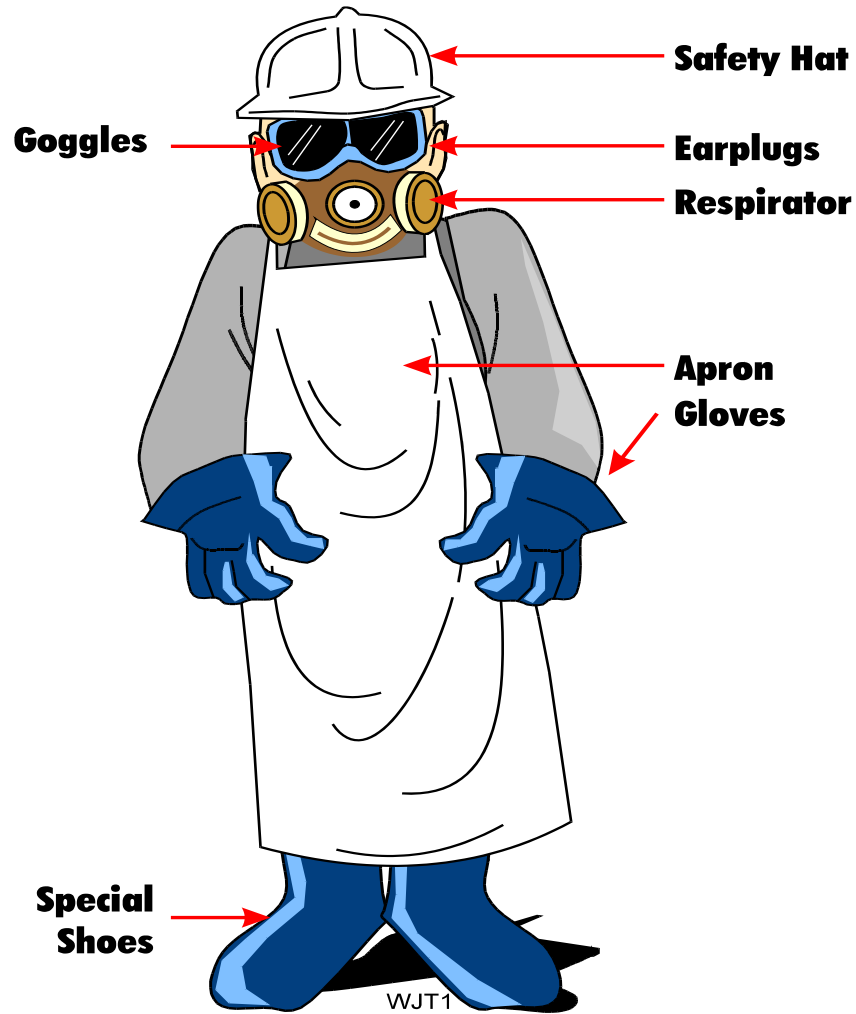
Figure 2.3-4: Precipitated (or Crystallized) Sudan IV Fat Stain

Pitch Dispersant

2 Main Chemical Types

- Surfactant** Products are combinations of non-ionic surfactants and anionic dispersants
Used to make the hydrophobic 'Pitch" more Hydrophilic
Ethoxylated Alcohol / Castor Oils
- Solvent** Products that remove or have a Creep effect or Stripping function
Orange Terpenes / Biosolvents
Batch Felt wash systems

SAFETY ASPECTS & PERSONAL PROTECTIVE EQUIPMENT





Defoamer Safety

Defoamer Product XXXX IS NOT a dangerous chemical

However:

Use gloves & safety glasses when handling.

Avoid contact with eyes and skin.

Locate nearest eyewash fountains.

Wash PPE thoroughly after handling.

Spills are slippery! Be cautious around feed stations and near addition points

- Have spill kit near by

Refer to MSDS.



Surfactant Safety

Xxxxxxxx IS NOT a dangerous chemical. However:

Use gloves & safety glasses when handling.

Avoid contact with eyes and skin.

Locate nearest eyewash fountains.

Wash PPE thoroughly after handling.

Spills are slippery! Be cautious around feed stations and near addition points

Refer to MSDS.

MSDS / SDS HAZARD CLASSIFICATIONS

Typical Silicone Emulsion Defoamer

	HMIS	NFPA
Health	1	1
Flammability	1	1
Physical hazards	0	
Instability		0

Typical Surfactant Pitch Dispersant

	HMIS	NFPA
Health	2	2
Flammability	1	1
Physical hazards	0	
Instability		0

SAFETY AND HANDLING TIPS

Know where MSDS's are located

Keep MSDS's current

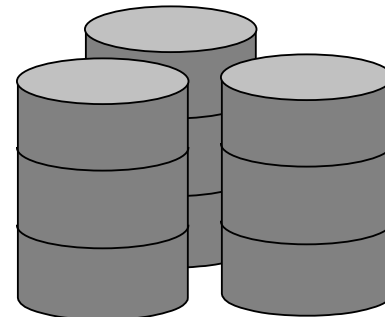


Refer to MSDS for potential health effects, first aid, PPE, or spill instructions



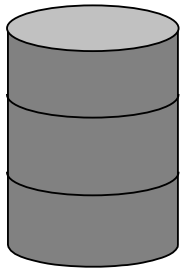
Always wash hands with soap before drinking, eating, smoking, etc. and at quitting time

Keep adequate ventilation where chemicals are stored or used



SAFETY AND HANDLING TIPS

Know where chemicals are in your workplace



Keep containers closed when not in use

Report any unlabelled chemicals



Never mix chemicals unless instructed to



Clean up or report spills immediately, post signs



SAFETY AND HANDLING TIPS

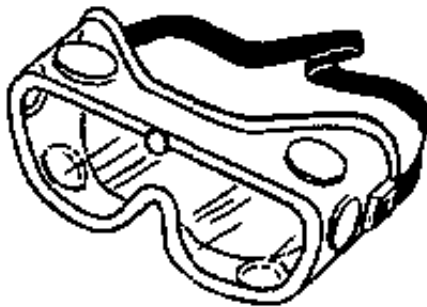
Before handling any chemical locate the emergency showers and eyewash station. It should be no more than 10 seconds from the chemical hazard with an unobstructed approach.

Be sure they have been checked for proper operation.

EYE PROTECTION



Safety Glasses are the basic form of eye protection. They protect the eye from impact of flying particles.



Splash-proof Safety Goggles should be worn whenever there is a possibility of liquid chemical splashing.

**SAFETY GLASSES DO NOT
COMPLETELY PROTECT YOUR
EYES FROM CHEMICAL
SPLASHING!!**

USE SAFETY GOGGLES

HAND PROTECTION



Gloves are the most common protection for the hands. Glove material should be compatible with the hazard. Neoprene or butyl gloves are used for many chemicals.

Thank You