Chemical Homeland Security System

C-HoSS

Chemical Compliance Systems, Inc.

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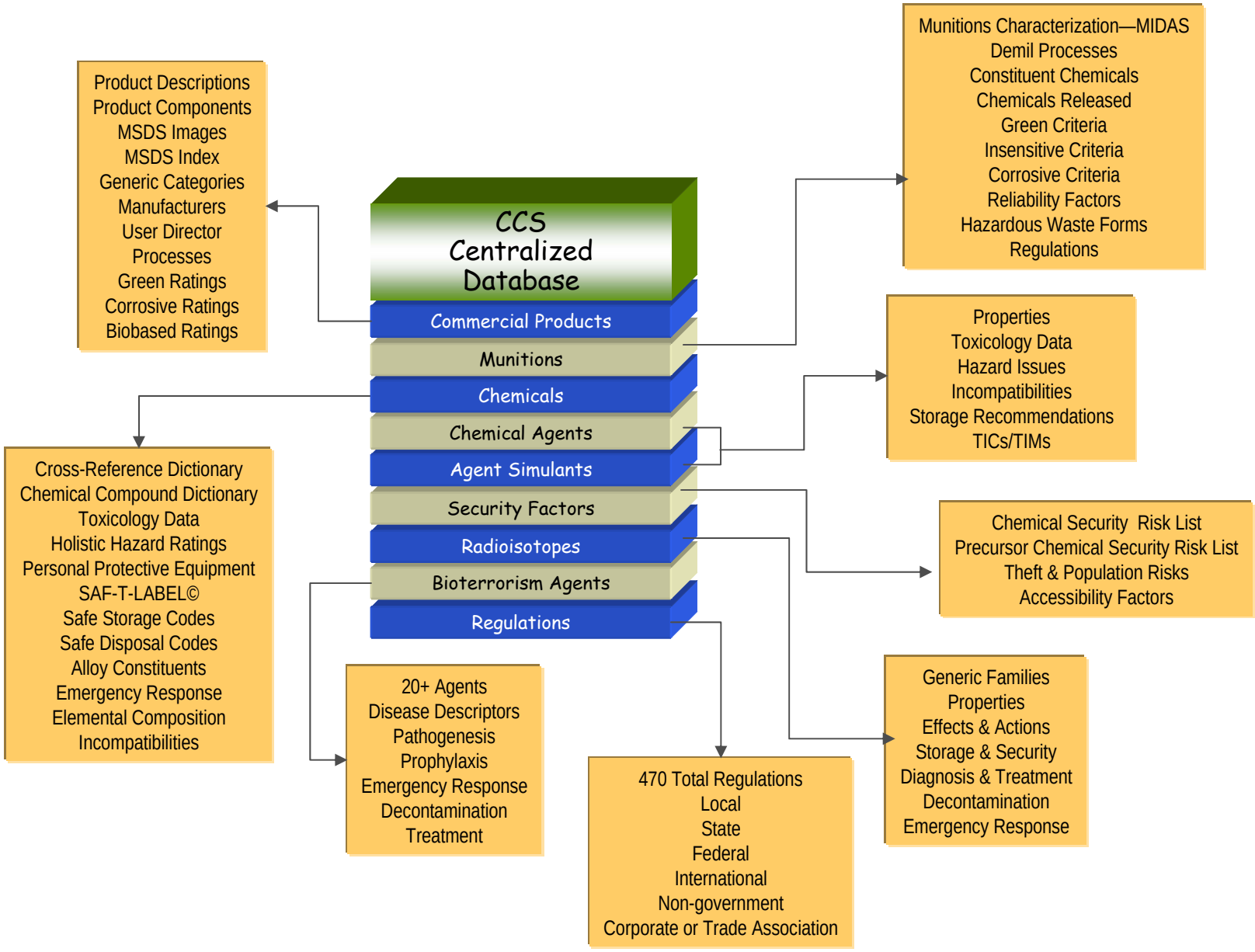
The CCS "Core" Database

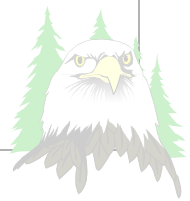


Regulated Hazardous Chemicals

Acute Hazard Orientation

Chemical Agents
Neurotoxins
Extreme
Toxins
Radioactives
Explosives
Shock Sensitives
Corrosives
Flammable
Oxidizers
Hazardous Air Pollutants
Persistent Bioaccumulative Toxins
Priority Pollutants

ACGIH
DEA
DOT
EPA
OSHA
California
Iowa
Maryland
Nevada
New Jersey
European Community



CPSC Specialty Regulated Substances

Canada Export Control Lists

DEA Essential Chemicals

DEA Precursor Chemicals

DOC Export Restrictions

EU Black/Gray Lists

IATA Air Transport Forbidden

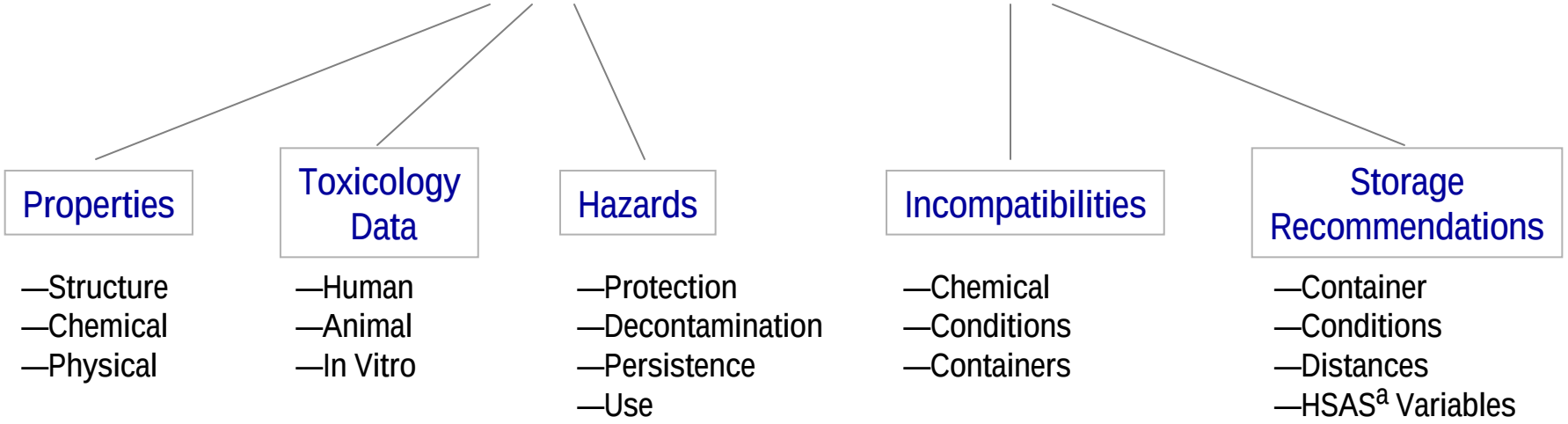
IATA Passenger Transport Forbidden

IATA Regulated Substances

UK The Red List (Water)

UN/FAO Prior Informed Consent

Chemical Agents and Simulants



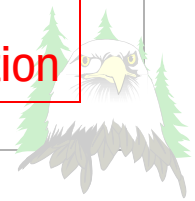
[a] HSAS = Homeland Security Advisory System

Toxic Industrial Chemicals/Toxic Industrial Materials (TICs/TIMs)

Selected Examples

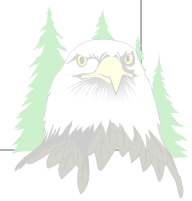
Industrial Feedstocks:	Acrylamide, Chlorine, Hydrogen Chloride, Phosgene
Carbamate Insecticides:	Baygon, Mobam, Temik, Zectran
Organochlorine Insecticides:	Aldrin, Dieldrin, Endrin, Lindane, Heptachlor
Organophosphate Insecticides:	Disulfotan, Mevnphos, Parathion, Methylparathion
Insecticide Synergists:	Piperonyl Butoxide
Fungicides:	Pentachlorophenol, Hexachlorobenzene, Maneb, Naban, Zineb
Fumigants:	Calcium Cyanide, Methyl Bromide, Phosphine
Seed Disinfectants:	Methylmercury Acetate, Methylmercury Cyanide

GOALS: [1] Identify all chemicals with severe to extreme acute toxicity
[2] Identify all chemicals in product classes with similar mechanisms of action



Incompatible Chemical Database

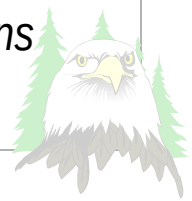
Chemical Class	Chemical	Incompatible Chemical	I.C. Class	Interaction Hazard
Corrosives	Acetic Acid	Hydrogen Peroxide	Oxidizer	Explosion
	Nitric Acid	Acetylene	Flammable	Explosion
	Chlorine	Aluminum Powder	Metal	Spontaneous Fire
Flammables	Acetone	Chloroform	Carcinogen	Explosion
	Benzene	Chlorine	Corrosive	Explosion
	Carbon Disulfide	Potassium	Flammable	Violent Explosion
Reactives	Nitrotoluene	Sulfuric Acid	Corrosive	Explosion
	Nitroethane	Hydrocarbons	Combustible	Explosion
	Acrylonitrile	Bromine	Corrosive	Explosion
Products	Toilet Bowl Cleaner	Metal Powders	Metals	Explosion
	Bleach	Ammonia	Product	Poisonous Gas
	Paint Solvent	Chloroform	Carcinogen	Explosion



Chemical Security Procedures

Security Procedure Phases

Phase I	Vulnerability Assessment *Identify chemical hazards, security risks, mortality risks*
Phase II	Countermeasures Implementation *Reduce vulnerabilities*
Phase III	Verification Audit *Independently confirm counter measure adequacy*
Phase IV	Management System Integration *Integrate chemical security procedures into line management functions*



C-HoSS Security Criteria and Standards

- Chemical Hazard Class Rankings (*by Hazard Class*)
- Chemical Hazard Grades (1-4) (*within each ranking*)
- Product Concentration Grades (1-4)

Chemical Hazard Factor (CHF) = Ranking ☞ Grade ☞ Concentration

- Theft Risk Grades (1-4) (*per product*)

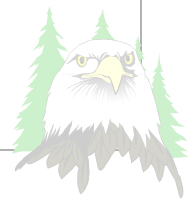
Chemical Security Risk Factor (CSRF) = Ranking ☞ Grade ☞ Concentration ☞ Theft Risk

- Population at Risk Grades (1-4)

Chemical Mortality Risk Factor (CMRF) = Ranking ☞ Grade ☞ Concentration ☞ Theft Risk ☞ Population Risk

- Accessibility Factor Levels (*Storage Constraint Levels and Descriptors*) (0.5 - 4.5)

CMRF ☺ Accessibility Factor (AF) = Vulnerability Factor (VF)



C-HoSS Security Risk Assessment Analytical Reports

PRODUCT & CHEMICAL ANALYSES

Inventory by Product Type [a]
Product by Location
Product by Container Size
Product by Weight
Product Hazard Classifications
Product Hazard Rankings
Product Hazard Grades
Product Hazard Factors
Product Security Risk Factors
Product Accessibility Factors
Product Accessibility Levels/Storage Codes
Chemicals by Product
Pure Chemicals by Location
Pure Chemicals by Weight

PRECURSOR CHEMICAL ANALYSES

Precursor Chemicals by Location
Precursor Chemicals by Container Size
Precursor Chemicals by Weight
Precursor Chemicals Hazard Classifications [b]
Precursor Chemicals Hazard Rankings
Precursor Chemicals Hazard Grades
Precursor Chemicals Hazard Factors
Precursor Chemicals Security Risk Factors
Precursor Chemicals Accessibility Factors
Precursor Chemicals Accessibility Levels/Storage Codes

SPECIALTY MODULE ANALYSES

Air Releases
Water Contaminants
Toxics
Pesticides
Hazardous Waste
Solid Waste
Storage Tanks
Munitions
Chemical Safety
Industrial Hygiene

INCOMPATIBILITY ANALYSES

Prioritized Incompatibility Threats by Product
Prioritized Incompatibility Threats by Room
Prioritized Incompatibility Threats by Building
Prioritized Incompatibility Threats by Facility

SECURITY ANALYSES

Inventory by CHF
Inventory by CSRF
Inventory by AF
Inventory by Storage Levels
Inventory (shift) by HSAS

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[a] Chemical, Precursor Chemical, Munition, Chemical Agent, Simulant.
[b] Assigned by their worst classification: (1) innate classification, or (2) reaction product classification.

C-HoSS Capabilities *vs.* Chemical Security Procedures

Security Procedure Phases	C-HoSS Capabilities
Phase I Vulnerability Assessment *Identify chemical hazards, security risks, mortality risks*	Chemical Hazard Factor Report Chemical Security Risk Factor Report Chemical Mortality Risk Factor Report Chemical Vulnerability Risk Factor Report
Phase II Counter measures Implementation *Reduce vulnerabilities*	Accessibility Factor (Storage Constraint) Report (per chemical/material)
Phase III Verification Audit *Independently confirm counter measure adequacy*	Chemical Vulnerability Factor "Report Card" (to the local fire department)
Phase IV Management System Integration *Integrate chemical security procedures into line management functions*	Integration of C-HoSS w/ the chemical tracking system Daily C-HoSS correlation w/ the Homeland Security Advisory System

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