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Chapter 1 : Quantum Chemical Corporation | www.nxgvision.com

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Defense industry[edit] December 6, A ship loaded with about 9, tons of high explosives destined for France caught fire as a result of a collision in Halifax harbour, and exploded. The explosion killed about 2, and injured about 9, Gillespie Company Shell Loading Plant explosion. A plant for processing ammonium nitrate in Edison, New Jersey exploded, killing 24 people, injuring and destroying several buildings. Explosion of between and tonnes of ordnance in an underground munitions store that killed 70 people. The cause of the fire was determined to be a welding rod damaging a hydraulic hose. This allowed hydraulic vapors to leak and spread throughout the silo, which were then ignited by an open flame. Lapua Cartridge Factory explosion. An explosion in a munitions factory in Lapua , Finland kills 40 workers. A military storage center in Rawalpindi, Pakistan exploded, killing more than 90 people. Evangelos Florakis Naval Base explosion , Cyprus. The disaster occurred when 98 containers of gunpowder exploded; 13 people were killed, among them the captain of the base, three commanders, twin brothers who were serving there as marines, and six firefighters. The Centralia, Pennsylvania coal mine fire began, forcing the gradual evacuation of the Centralia borough. The fire continues to burn in the abandoned borough. March 4, The Natchitoches explosion: A inch gas transmission pipeline, north of Natchitoches, Louisiana , belonging to the Tennessee Gas Pipeline exploded and burned from stress corrosion cracking on March 4, killing 17 people. At least 9 others were injured, and 7 homes feet from the rupture were destroyed. The same pipeline had also had an explosion on May 9, , just feet m from the failure. The Torrey Canyon supertanker was shipwrecked off the west coast of Cornwall, England, causing an environmental disaster. This was the first major oil spill at sea. The Banqiao Dam failed in the Henan Province of China due to extraordinarily heavy precipitation from the remnants of Typhoon Nina and poor construction quality of the dam, which was built during the Great Leap Forward. The flood immediately killed over , people, and another , died of subsequent epidemic diseases and famine, bringing the total death toll to around , and making it the worst technical disaster ever. This is the largest oil spill from an oil tanker in history. Three Mile Island accident. Mechanical failures in the non-nuclear secondary system, followed by a stuck-open pilot-operated relief valve in the primary system, allowed large amounts of reactor coolant to escape. Plant operators initially failed to recognize the loss of coolant, resulting in a partial meltdown. The reactor was brought under control but not before up to P Bq 13 million curies of radioactive gases were released into the atmosphere. Ixtoc I oil spill. The Ixtoc I exploratory oil well suffered a blowout resulting in the third-largest oil spill and the second-largest accidental spill in history. A Texaco oil rig drilled into a salt mine transforming Lake Peigneur , a freshwater lake before the accident, into a saltwater lake. An explosion in Newark, New Jersey was felt for about â€” miles from the epicenter, but only claimed 1 life, and injured 22â€”24 people. The mobile offshore oil rig Ocean Ranger was struck by a rogue wave off the coast of Newfoundland, Canada and sank with the loss of all 84 crew. Romeoville, Illinois , Union Oil refinery explosion killed 19 people. An explosion at a liquid petroleum gas tank farm killed hundreds and injured thousands in San Juanico, Mexico. At the Chernobyl nuclear power plant in Prypiat, Ukraine a test on reactor number four went out of control, resulting in a nuclear meltdown. The ensuing steam explosion and fire killed up to 50 people with estimates that there may be between 4, and several hundred thousand additional cancer deaths over time. Fallout could be detected as far away as Canada. The Chernobyl Exclusion Zone , covering portions of Belarus and Ukraine surrounding Prypiat, remains contaminated and mostly uninhabited. Prypiat itself was totally evacuated and remains as a ghost town. Norco, Louisiana , Shell Oil refinery explosion. Hydrocarbon gas escaped from a corroded pipe in a catalytic cracker and was ignited. Louisiana state police evacuated 2, residents from nearby neighborhoods. Seven workers were killed and 42 injured. An explosion and resulting fire on a North Sea oil production platform killed men. Exxon Valdez oil spill. It is considered to be one of the most devastating human-caused environmental disasters ever to occur. Texas City Refinery explosion. Over were injured, and

15 were confirmed dead, including employees of Jacobs, Fluor and BP. BP has since accepted that its employees contributed to the accident. Several level indicators failed, leading to overfilling of a knockout drum, and light hydrocarbons concentrated at ground level throughout the area. A nearby running diesel truck set off the explosion. Hertfordshire Oil Storage Terminal fire. A series of explosions at the Buncefield oil storage depot, described as the largest peacetime explosion in Europe, devastated the terminal and many surrounding properties. There were no fatalities. Sayanoâ€"Shushenskaya power station accident. Seventy-five people were killed at a hydroelectric power station when a turbine failed. The failed turbine had been vibrating for a considerable time. Emergency doors to stop the incoming water took a long time to close, while a self-closing lock would have stopped the water in minutes. A large explosion occurred at a Kleen Energy Systems megawatt , Siemens combined cycle gas- and oil- fired power plant in Middletown , Connecticut , United States. Deepwater Horizon oil spill in the Gulf of Mexico. Eleven oil platform workers died in an explosion and fire that resulted in a massive oil spill in the Gulf of Mexico , considered the largest offshore spill in US history. Fukushima I nuclear accidents in Japan. Hurricane Sandy caused a ConEdison power plant to explode, causing a blackout in most of midtown Manhattan. The blue light emitted from the arc made places as far as Brooklyn glow. No person was killed or injured. Forty-seven people were killed when there was a derailment of an oil shipment train. The oil shipment caught fire and exploded, destroying more than thirty buildings. It was the fourth-deadliest rail accident in Canadian history. Food industry[edit] May 2, The Washburn "A" Mill in Minneapolis was destroyed by a flour dust explosion , killing The mill was rebuilt with updated technology. The explosion led to new safety standards in the milling industry. The event has entered local folklore, and residents claim that on a hot summer day, the area still smells of molasses. The Roland Mill, located in Bremen, Germany, was destroyed by a flour dust explosion , killing 14 and injuring Grain elevator explosion in Haysville, Kansas. A series of dust explosions in a large grain storage facility resulted in the deaths of seven people. Thirteen people were killed and 42 injured when a dust explosion occurred at a sugar refinery owned by Imperial Sugar. Morin-Heights, Quebec , Canada. A roof collapse in the Gourmet du Village bakery warehouse killed three workers. Pemberton Mill was a large factory in Lawrence, Massachusetts that collapsed without warning. An estimated workers were killed and injured. Grover Shoe Factory disaster. A boiler explosion , building collapse and fire killed 58 people and injured in Brockton, Massachusetts. This was a major industrial disaster in the US, causing the death of more than garment workers who either died in the fire or jumped to their deaths. An explosion at an illegal fireworks operation on a farm near Benton, Tennessee killed eleven, injured one, and inflicted damage within a radius of several miles. The accident was kept secret by the communist regime , however, the news broke the iron curtain and made it to the western media. A massive fire and explosions at a chemical plant killed two people and injured over Kader Toy Factory fire. A fire started in a poorly built factory in Thailand. Exit doors were locked and the stairwell collapsed. A fire and explosion at a fireworks depot in Enschede, Netherlands resulted in 24 deaths and another were injured. About 1, homes were damaged or destroyed. One firefighter died; seven from the rescue team as well as 17 locals were injured. A gas leak triggered a large explosion and ensuing fire at a gear manufacturing facility in Milwaukee, Wisconsin. Three were killed and 47 injured, with several of the building at the facility being leveled. Qinghe Special Steel Corporation disaster. A ladle holding molten steel separated from the overhead iron rail, fell, tipped, and killed 32 workers, injuring another 6. An unlicensed fireworks factory exploded accidentally, leaving by some reports at least 22 people dead and at least injured.

Chapter 2 : Directory of the chemical industries in Canada as of date January 1, - CORE

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Tessenderlo holds number two positions in the production of animal feed-grade phosphates and potassium sulphate and the number three position worldwide in the production of gelatin. While targeting a global market, backed by a network of 66 factories and 40 sales offices, Tessenderlo is a highly European group. In Europe , the company is the largest producer of glycine, and number two in caustic potash; the company also holds leading positions in the production of plastic compounds and polyvinyl chloride PVC. The company posted revenues of EUR 2. Since , Tessenderlo has been structured in three primary divisions: Chemicals; Specialties, including fine chemicals, gelatin, and natural derivatives; and Plastics Converting, including the production of PVC-based profiles, pipes and fittings, and compounds. That company began manufacturing chloric acid and sodium sulfate , used in various industries and products such as detergents. The formation of this company marked the start of the later Tessenderlo Group. The site was redeveloped and in launched the production of the sulfate-based fertilizer potash and hydrochloric acid, a byproduct of the sulfate production process. In that year, the company was renamed Produits Chimiques de Tessenderlo. That agreement led to the creation of a joint venture between the two companies, called Produits Chimiques de Limbourg, formed in The Limbourg-based joint venture built a new plant in the town of Ham and began producing potassium sulphate and dicalcium phosphate. Instead, Tessenderlo set up its own independent operation, focused on the main Tessenderlo site, for the production of new salt and potash derivatives, including sulfuric acid , dicalcium phosphate, chlorine, and caustic soda. The company went public the following year, listing on the Brussels Stock Exchange. The years of World War II and the Nazi occupation of Belgium culminated in an explosion at the main site, which killed nearly and left wounded in Following the war, the company rebuilt its operations. This time, the French company acquired its Belgian counterpart outright. Gelatin, derived from slaughterhouse byproducts, was produced by hydrolyzing the bones and skins of pigs and cattle, a process that made use of hydrochloric acid. As Tessenderlo had already emerged as a major producer of hydrochloric acid, the extension proved a natural fit. Gelatin and, later, other specialty products such as natural derivatives were used in flavorings. In , the company teamed up with DSM to begin production of vinyl chloride monomer and, later, polyvinyl chloride PVC. For this effort, the companies created a joint venture, Limburgse Vinyl Maatschappij, and built a new production facility, which came onstream in The company also changed its name that year, becoming Tessenderlo Chemie. Formed in , PB Gelatins began to expand through acquisitions, starting with the purchase of Colles et Gelatines, based in Zaventem, in In , the gelatin production subsidiary added a site in Germany , acquiring Nienburger Gelatine. Tessenderlo extended its operations again with the launch of a fine chemicals division, which began producing benzyl chloride, another chlorine derivative, as part of a joint venture, in That business was expanded in with the purchase of percent control of Benzyl Chemie. Meanwhile, the company had added another company, Limburgse Rubber Producten, in , and then launched construction of a new electrolysis facility. By the early s, Tessenderlo had completed, in large part, its diversification efforts. In , the company restructured its operations, bringing all of its subsidiaries under a single holding company, named Tessenderlo Chemie N. The newly reorganized company now boasted four main areas of operations: In , the company launched a strategy to add a new business division, that of Plastic Conversion. As part of this effort, the group launched a new series of acquisitions, starting with French plastic pipe manufacturer Sotra in The following year, the company began producing window profiles through the purchase of Plastival, located in Clerval, France. By the end of the decade, the company had added Dyka, a pipes and fittings maker active in The Netherlands and Belgium, acquired in Into the s, the group boosted its plastic products operations with the purchase of Deltaplast, in The

Netherlands, in , and Sepereff, a pipes producer in Quincieux, France, in Niche Leader in the New Century Tessenderlo continued building up its other core business areas through the s as well. Tessenderlo Group has chosen to focus on those manufacturing sectors in which it can be a world leader. It is this diversity and interrelation between product lines that limits the impact of fluctuating market conditions. Tessenderlo expanded its basic production operations with the acquisition of a chlorine, alkali, and mineral chloride production facility from Produits Chimiques de Loos in The following year, the company acquired full control of the Lim-burgse Vinyl Maatschappij joint venture. Tessenderlo also extended its downstream operations, buying up Tiffauges, France-based Thermoplastiques Cousin Tessier in Wymar was a major producer of PVC-based window profiles. In the late s, however, the group began its expansion into the Americas. A major part of this effort was accomplished with the purchase of Hickson Kerley, the U. Completed in , the acquisition gave Tessenderlo control of a major producer of specialty chemicals, including sulfur-based agricultural and industrial products in the U. The Kerley acquisition also gave the company its first foothold in the Latin American markets. Tessenderlo continued to add operations in the United States , such as Chelsea Building Products in Pennsylvania , acquired in In Italy, the company purchased a chemicals plant in Pieve Vergonte in The group also had entered China, creating the joint venture Lianyungang Chemical Factory in , in order to produce benzyl chloride and other chemicals. In , the company expanded its gelatin business, adding a site in Davenport, Iowa , and in Santa Fe , Argentina , marking the first international expansion of that division. The growth of all of its core operational divisions led Tessenderlo to undertake a new restructuring in As part of that process, the company created three core business groups: Chemicals, including inorganics, chlor-alkalis, and PVC; Specialties, including gelatin, natural derivatives, and fine chemicals; and Plastics Converting, including profiles, pipes and fittings, and compounds. Already a world leader in most of its product categories, Tessenderlo was prepared to continue its expansion on a global scale into the late s. Principal Subsidiaries Aliphos S. France ; Calaire Chimie S. France ; Chelsea Building Products Inc. United States ; Chemilyl S. France ; Cofipar S. Netherlands ; Dyka B. Italy ; John Davidson Holding Ltd. United Kingdom ; Kerley Trading Inc. China ; Limburgse Vinyl Maatschappij S. France ; Tessenderlo Chemie S. United Kingdom ; Tessenderlo Italia S. Chile ; Tessenderlo Kerley Mexico S. Mexico ; Tessenderlo Polska Sp. The company begins fine chemicals production. All operations are merged under the Tessenderlo Chemie N. The company begins an extension into production of PVC-based products, including pipes and fittings, window profiles and compounds. The company acquires Caillaud of France and enters the natural derivatives market. The company acquires the Wymar group, producer of window profiles, and enters the U. The company restructures operations along three primary business divisions: Chemicals; Specialties; and Plastics Converting. Warmington, Andrew, "Soap Stars: Cite this article Pick a style below, and copy the text for your bibliography.

Chapter 3 : Tessenderlo Group | www.nxgvision.com

Polyethylene is a highly popular plastic that is used, for instance, in milk and detergent jugs, ketchup bottles, film packaging, and snack food bags. The company is also the largest producer of ethanolâ€”or, industrial alcoholâ€”with a 39 percent market share. Other industrial chemicals produced by the company, acetic acid and vinyl acetate monomer, command the second-largest market share. The small but growing polypropylene business of the early s was becoming significant, especially with the oversupply of polyethylene. Quantum Chemical is the largest propane retailer in the nation, dispensing approximately million gallons of propane to locations. While Quantum Chemical consists of two principal industries, chemicals and propane, this has been true only as of Prior to , the firm was identified with the hard liquor and wine businesses as well as many others. A unique characteristic of Quantum Chemical has been its unusual metamorphosis from a diverse company and major liquor dealer into a highly focused firm that has virtually nothing in common with its origins. The oldest of the three, National Distillers, disappeared and was replaced in by a new name and identity. Nonetheless, as National Distillers evolved, it had branched out into both the chemical and propane industries. The Great Depression years of the s were extremely trying for the nearly bankrupted company, whose origins as a thriving hard liquor concern stretched back to The Distilling Company of Americaâ€”parent of National Distillersâ€”did not go under, as did so many other liquor concerns with the onset of Prohibition. In it reorganized as a company that, with a new name and image, could survive and await the turn of events. Headed by Porter, stockholders of National Distillers Products approved the decision to manufacture and market sacramental wine for religious services as well as medicinal and industrial alcohol. The National Distillers Products Corporation survived the lean Prohibition years, and President Porter was making plans for a resumption of the liquor trade well before the Twenty- First Amendment repealing Prohibition was ratified by a majority of the states in From then on, the National Distillers Products Corporation took off, expanding vigorously in one of the worst years of the Depression. The World War II years saw the advent of the petrochemical industry. The dearth of raw materials put pressure on industry to find new uses for by-products that were previously discarded as waste. Emerging from the war with its identity as an alcohol producer intact, National Distillers nonetheless saw a future in industrial chemicals and quickly branched out into this emerging industry. By the company had so committed itself to industrial chemicals that stockholders altered the company name that year to National Distillers and Chemical Corporation to reflect the change. US Industrial Chemicals, which would change the identity and future of National Distillers, was one of the largest and oldest industrial chemical concerns in the nation. It was incorporated in , the year U. In the company became a global leader in the industrial chemical industry when its Curtis Bay plant in Baltimore opened, the first anhydrousâ€”no waterâ€”alcohol processing facility in the world. By the Baltimore plant was pioneering the manufacture of cellulose acetateâ€”a plastic used especially in yarn, textiles and photographic film. One important result was the manufacture of polyethylene, a plastic that would become increasingly indispensable in the postwar years. Merger talks were proceeding with National Distillers, a longtime producer of industrial alcohol. Delighted by having gas for cooking and heating at relatively little cost and effort, Anton wondered whether other families in the suburbs would choose gas over electric. The demand for propane gas, which hitherto had been considered a useless byproduct of petroleum production, was astounding. Its distribution network had reached virtually every state in the nation. Suburban Propane owned its own pipelines, oil fields, and petroleum wells and was a very predictable, steady business. The post- World War II years had witnessed further expansion into the liquor and wine fields, as well as film processing, fertilizer production, tire valve manufacture, the insurance business and, already mentioned, the manufacture of blankets. Constructed in , it employs more than research scientists, making it

the one of the largest chemical research teams of any chemical corporation in the world. Under Chairman John Hoyt Stookey, Quantum Chemical became a leader in the petrochemical and propane businesses, which is not without its problems. These industrial chemicals, byproducts of petroleum production, are used in a seemingly endless array of products: Because of this enormous, substantial demand for plastics of all kinds, competition for this lucrative market is intense. The recession of the s also presented financial difficulties for all chemical industries, including that of Quantum Chemical, and as a result several plants that had been built during the prosperous s were forced to close. Similarly, with the outbreak of the Persian Gulf War in , the price of ethylene, the essential raw material for many petrochemicals, skyrocketed for Quantum Chemical as for other major chemical firms. As a result of war and recession, a glut of polyethylene forced down the price of this useful commodity. There also existed the threat of adverse weather conditions, especially affecting propane gas demand, which plunges in warmer winter weather. Another problem for Quantum Chemical was the expense of meeting increasing federal, state, and local environmental regulations, all of which were not without enormous cost. The company met environmental challenges by committing itself to a strategy of voluntary goals that include a 90 percent reduction in the release of carcinogens into the atmosphere by and a 50 percent reduction of all non-carcinogenic chemicals by Recycled plastic reduces the dependency on foreign oil and is cheap and widely accepted by consumers. A huge new plastic recycling plant was constructed in for this purpose in Heath, Ohio. Propane distribution is a far less volatile business than chemicals, the only fluctuation being the weather rather than economic or political conditions. In its infancy during the Depression, Suburban Propane was churning handsome profits. Nevertheless, because of the serious effects of the recession and the Gulf War on the chemical side of Quantum Chemical, Suburban Propane underwent major cost-cutting and streamlining as well as a redoubling of its efforts to secure more new customers. While the problems facing Quantum Chemicalâ€”which was to be merged with Hanson PLC in September of , pending shareholder approvalâ€”were very real, the company is well poised to meet the future. Despite some plant closures, Quantum Chemical has, according to market analysts, among the most efficient plants in the world. The slack in the polyethylene market could well be overcome by the increasing use of metha-nol-based fuel in automobiles: Quantum Chemical is a major methanol producer and marketer. Finally, the demand for plastic continued to grow, and new uses were constantly being found. Developing countries were significant users of plastic but were producing little of it; as one of the oldest and most highly evolved of present day chemical companies, Quantum Chemical Corporation stood to benefit. Further Reading Anton, Mark J. Newcomen Society in North America , , pp. Quantum Chemical Corporation annual reports, and

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Chapter 4 : Technological and industrial history of Canada - Wikipedia

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Largest chemical companies worldwide by revenue Premium Industry-specific and extensively researched technical data partially from exclusive partnerships. A paid subscription is required for full access. Largest chemical companies worldwide based on revenue in in billion U. The values are based on the Financial Times Equity list of the leading global companies. The chemical company LyondellBasell was ranked third at that time, generating a revenue of approximately Follow this link to get access to the top chemical companies list. Leading chemical companies worldwide based on revenue Chemical companies produce and develop industrial chemicals through the conversion of raw materials â€”organic and inorganic- into a wide variety of products. Chemical production is classified into two separate categories. There are specialty batch manufacturers that produce more expensive chemicals that are less commonly used within the chemical market. These performance chemicals are often produced by smaller manufacturers. On the other hand, commodity manufacturers tend to produce a large volume of basic and inexpensive compounds. The production of organic polymers for plastics, fibers, and elastomers are a rapidly growing sector of the chemical industry. The chemical manufacturing industry in the United States is quite prominent, with companies such as Dow Chemical and LyondellBasell Industries. The chemical sector in Europe represents a great proportion of their manufacturing trade surplus. Europe is one of the largest chemical trading regions in the world. BASF operates on a global scale and maintains its operations in chemicals, plastics, performance products, functional and agricultural solutions, and oil and natural gas. With headquarters around the world, Bayer is known for marketing heroin in the past and branding aspirin. The Linde group is a large industrial gas and engineering company. The company produces many gas products such as atmospheric oxygen, nitrogen, and argon. Show more Revenue in billion U.

Chapter 5 : Trade Shows in Canada,Trade Fairs in Canada,Canada Trade Events & Exhibitions

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Description Principles and Practices of Method Validation Principles and Practices of Method Validation is a book entailing methods of validating and analyzing many analytes taken from a single aliquot. Some methods discussed include: New information added in the revisions includes: This journal includes contributions to the macromolecular chemistry and physics field. The topics that are included in this book are low and high temperature measurements, secondary coefficients, diffusion coefficients , light scattering , transient methods for thermal conductivity , methods for thermal conductivity, falling-body viscometers, and vibrating viscometers. Thermoanalytical and calorimetric techniques along with thermodynamic and kinetic properties are also discussed. Later volumes of this book discuss the applications and principles of these thermodynamic and kinetic methods. This book covers all ways to develop equations of state. It gives the strengths and weaknesses of each equation. Some equations discussed include: It also goes into experimental techniques to test many different thermodynamic states precisely and accurately. Measurement of the Thermodynamic Properties of Single Phases was written for people interested in measuring thermodynamic properties. Also included in this book are the measurement techniques to obtain activity coefficients , interfacial tension , and critical parameters. This book was written for researchers and graduate students as a reference source. This book is aimed as a reference for graduate students and atmospheric researchers. Atmospheric Particles goes into depth on the properties of aerosols in the atmosphere and their effect. Topics covered in this book are: Atmospheric Particles also covers techniques to analyze the atmosphere and ways to take atmospheric samples. Behaviour, Separation and Characterisation is a book that discusses environmental colloids and current information available on them. This book focuses on environmental colloids and particles in aquatic systems and soils. It also goes over techniques such as: Environmental Colloids and Particles: Behaviour, Separation and Characterisation also delves into how these colloids and particles interact. This book gives ideas on how to use fractal geometry to compare and contrast different ecosystems. It also gives an overview of the knowledge needed to solve environmental problems. Finally, Biophysical Chemistry of Fractal Structures and Processes in Environmental Systems shows how to use the fractal approach to understand the reactivity of flocs , sediments, soils, microorganisms and humic substances. Impact on the Terrestrial Ecosystem is meant to be read by chemists and biologists that study environmental systems. Also, this book should be used as a reference for earth scientists, environmental geologists, environmental engineers, and professionals in microbiology and ecology. Interactions Between Soil Particles and Microorganisms: Impact on the Terrestrial Ecosystem is about how minerals, microorganisms, and organic components work together to affect terrestrial systems. This book identifies that there are many different techniques and theories about minerals, microorganisms, and organic components individually, but they are not often associated with each other. It further goes on to discuss how these components of soil work together to affect terrestrial life. Impact on the Terrestrial Ecosystem gives techniques to analyze minerals, microorganisms, and organic components together. This book also has a large section positing why environmental scientists working in the specific fields of minerals, microorganisms, and organic components of soil should work together and how they should do so. This book goes into depth about: Chemical Analysis and Speciation is a book that discusses techniques and devices to monitor aquatic systems and how new devices and techniques can be developed. This book emphasizes the future use of micro-analytical monitoring techniques and microtechnology. In Situ Monitoring of Aquatic Systems: Chemical Analysis and Speciation is aimed at researchers and laboratories that analyze aquatic systems such as rivers, lakes, and oceans. Structure and Surface Reactions of Soil Particles is aimed at any researcher researching soil or in the field of anthropology. It goes into depth on topics such as: This book

includes techniques to assess how bioassays can be used to evaluate how an organism is affected by trace metals. Physicochemical Kinetics and Transport at Biointerfaces Physicochemical Kinetics and Transport at Biointerfaces is a book created to aid environmental scientists in field work. The book gives an overview of chemical mechanisms, transport, kinetics, and interactions that occur in environmental systems. The second edition has many revisions that come from reports on nomenclature between and This journal debuted in The goal statement for Pure and Applied Chemistry is to "publish highly topical and credible works at the forefront of all aspects of pure and applied chemistry. The idea of one journal being a definitive place for a vast amount of chemistry was difficult for the committee to grasp at first. This book is a collection of names and terms already discussed in Pure and Applied Chemistry. The second edition of this book was published in These changes included updated material and an expansion of the book to include over seven thousand terms. This project made an XML version of the book that includes over seven thousand terms. The XML version of the book includes an open editing policy, which allows users to add excerpts of the written version. This event is also being held to encourage young people to get involved and contribute to chemistry.

Chapter 6 : International Union of Pure and Applied Chemistry - Wikipedia

The report consists Of a Directory Of Canadian Chemical Industries which has been compiled from the schedules of the Industrial Census and contains the names, addresses and products Of firms whose products are either chemicals or are the result Of processes involving chemical change.

Galamb [19] and Eugene Farkas. Smith, Gus Degner and Peter E. Martin were also part of the team. This is a retroactive classification scheme; the concept of model years as understood today did not exist at the time. The engines of the first 2, units were cooled with water pumps ; the engines of unit 2, and onward, with a few exceptions prior to around unit 2,, were cooled by thermosiphon action. This was closer to that used for stationary gas engines than the expensive high-voltage ignition magnetos that were used on some other cars. This ignition also made the Model T more flexible as to the quality or type of fuel it used. The system did not need a starting battery, since proper hand-cranking would generate enough current for starting. Electric lighting powered by the magneto was adopted in , replacing acetylene and oil lamps, but electric starting was not offered until It was also utilized in the drivetrain of the Fordson tractor, which was produced in the US until , and in Ireland until Its transmission was a planetary gear type billed as "three speed". The throttle was controlled with a lever on the steering wheel. The left pedal was used to engage the transmission. With the floor lever in either the mid position or fully forward and the pedal pressed and held forward, the car entered low gear. When held in an intermediate position, the car was in neutral. If the left pedal was released, the Model T entered high gear, but only when the lever was fully forward â€" in any other position, the pedal would only move up as far as the central neutral position. This allowed the car to be held in neutral while the driver cranked the engine by hand. The car could thus cruise without the driver having to press any of the pedals. The first units were sent in reverse with a lever; all units after that were sent in reverse with a pedal between the clutch and brake pedals. The right pedal operated the transmission brake â€" there were no brakes on the wheels. The floor lever also controlled the parking brake , which was activated by pulling the lever all the way back. This doubled as an emergency brake. Although it was uncommon, the drive bands could fall out of adjustment, allowing the car to creep, particularly when cold, adding another hazard to attempting to start the car: As the car utilized a wet clutch , this condition could also occur in cold weather, when the thickened oil prevents the clutch discs from slipping freely. Power reached the differential through a single universal joint attached to a torque tube which drove the rear axle ; some models typically trucks, but available for cars, as well could be equipped with an optional two-speed Ruckstell rear axle shifted by a floor-mounted lever which provided an underdrive gear for easier hill climbing. All gears were vanadium steel running in an oil bath. Transmission bands and linings[edit] Two main types of band lining material were used: Generally, the cotton lining is "kinder" to the drum surface, with damage to the drum caused only by the retaining rivets scoring the drum surface. Wood â€" Wooden linings were originally offered as a "longer life" accessory part during the life of the Model T. They were a single piece of steam bent wood and metal wire, fitted to the normal Model T transmission band. The sensation is of a definite "grip" of the drum and seemed to noticeably increase the feel, in particular of the brake drum. Suspension and wheels[edit] This section does not cite any sources. Please help improve this section by adding citations to reliable sources. Unsourced material may be challenged and removed. September Learn how and when to remove this template message The suspension components of a Ford Model T: The coil-spring device is an aftermarket accessory, the "Hassler shock absorber". Model T suspension employed a transversely mounted semi-elliptical spring for each of the front and rear beam axles which allowed a great deal of wheel movement to cope with the dirt roads of the time. The front axle was drop forged as a single piece of vanadium steel. Ford twisted many axles through eight full rotations degrees and sent them to dealers to be put on display to demonstrate its superiority. The Model T did not have a modern service brake. The right foot pedal applied a band around a drum in the transmission, thus stopping the rear wheels from turning. The previously mentioned parking brake lever operated band brakes

acting on the inside of the rear brake drums, which were an integral part of the rear wheel hubs. Optional brakes that acted on the outside of the brake drums were available from aftermarket suppliers. Wheels were wooden artillery wheels , with steel welded-spoke wheels available in and Horseshoe nails on the roads, together with the high pressure, made flat tires a common problem. Balloon tires became available in The steering gear ratio was changed from 4: All tires in this time period used an inner tube to hold the pressurized air; tubeless tires were not generally in use until much later. Colors[edit] By , half of all the cars in the U. In his autobiography, Ford reports that in he told his management team, "Any customer can have a car painted any color that he wants so long as it is black. Green was available for the touring cars, town cars, coupes, and Landaulets. Gray was only available for the town cars, and red only for the touring cars. By , all cars were being painted midnight blue with black fenders. Only in was the "any color so long as it is black" policy finally implemented. It is often stated Ford suggested the use of black from to due to the low cost, durability, and faster drying time of black paint in that era. Paint choices in the American automotive industry, as well as in others including locomotives, furniture, bicycles, and the rapidly expanding field of electrical appliances , were shaped by the development of the chemical industry. These included the disruption of dye sources during World War I and the advent, in the mids, of new nitrocellulose lacquers that were faster-drying and more scratch-resistant, and obviated the need for multiple coats; [34]: Among the most immediately visible and identifiable changes were in the hood and cowl areas, although many other modifications were made to the vehicle. The firewall was flat from the windshield down with no distinct cowl. A significant change to the cowl area occurred with the windshield relocated significantly behind the firewall and joined with a compound-contoured cowl panel. The folding hinges were now located at the joint between the flat sides and the curved top. This is sometime referred to as the "low hood" to distinguish it from the later hoods. The back edge of the hood now met the front edge of the cowl panel so that no part of the flat firewall was visible outside of the hood. This design was used the longest and during the highest production years, accounting for about half of the total number of Model Ts built. The taper of the hood was increased and the rear section at the firewall is about an inch taller and several inches wider than the previous design. While this is a relatively minor change, the parts between the third and fourth generations are not interchangeable. The hood was again enlarged, with the cowl panel no longer a compound curve and blended much more with the line of the hood. The distance between the firewall and the windshield was also increased significantly. This style is sometimes referred to as the "high hood". The styling on the last "generation" was a preview for the following Model A, but the two models are visually quite different, as the body on the A was much wider and had curved doors as opposed to the flat doors on the T. Pavement was a rarity except for sidewalks and a few big-city streets. The sense of the term "pavement" as equivalent with "sidewalk" comes from that era, when streets and roads were generally dirt and sidewalks were a paved way to walk along them. Agriculture was the occupation of many people. Power tools were scarce outside factories, as were power sources for them; electrification, like pavement, was found usually only in larger towns. Rural electrification and motorized mechanization were embryonic in some regions and nonexistent in most. Henry Ford oversaw the requirements and design of the Model T based on contemporary realities. Consequently, the Model T was intentionally almost as much a tractor and portable engine as it was an automobile. It has always been well regarded for its all-terrain abilities and ruggedness. It could travel a rocky, muddy farm lane, cross a shallow stream, climb a steep hill, and be parked on the other side to have one of its wheels removed and a pulley fastened to the hub for a flat belt to drive a bucksaw , thresher , silo blower, conveyor for filling corn cribs or haylofts, baler , water pump, electrical generator, and many other applications. One unique application of the Model T was shown in the October issue of Fordson Farmer magazine. It showed a minister who had transformed his Model T into a mobile church, complete with small organ. For example, Harry Ferguson , later famous for his hitches and tractors, worked on Eros Model T tractor conversions before he worked with Fordsons and others. During the next decade, Model T tractor conversion kits were harder to sell, as the Fordson and then the Farmall , as well as other light and affordable tractors, served the farm market. But during the Depression s , Model T tractor

conversion kits had a resurgence, because by then used Model Ts and junkyard parts for them were plentiful and cheap. An armored-car variant called the FT-B was developed in Poland in due to the high demand during the Polish-Soviet war in Many Model Ts were converted into vehicles which could travel across heavy snows with kits on the rear wheels sometimes with an extra pair of rear-mounted wheels and two sets of continuous track to mount on the now-tandemed rear wheels, essentially making it a half-track and skis replacing the front wheels. They were popular for rural mail delivery for a time. The common name for these conversions of cars and small trucks was "snowflyers". These vehicles were extremely popular in the northern reaches of Canada, where factories were set up to produce them. When introduced, the T used the building methods typical at the time, assembly by hand, and production was small. The Ford Piquette Avenue Plant could not keep up with demand for the Model T, and only 11 cars were built there during the first full month of production. More and more machines were used to reduce the complexity within the 84 defined areas. During this time the Model T production system transitioned into an iconic example of assembly line production; [16] in subsequent decades it would also come to be viewed as the classic example of the rigid, first-generation version of assembly line production, as opposed to flexible mass production. The Model T was a great commercial success, and by the time Henry made his 10 millionth car, half of all cars in the world were Fords. It was so successful Ford did not purchase any advertising between and ; instead, the Model T became so famous, people considered it a norm. As other companies offered comfort and styling advantages, at competitive prices, the Model T lost market share. Design changes were not as few as the public perceived, but the idea of an unchanging model was kept intact. Almost , were built after car production stopped, as replacement engines were required to service already produced vehicles. The Model T employed some advanced technology, for example, its use of vanadium steel alloy.

Chapter 7 : Natureevents Directory: Science Events - Search Results

Excerpt from Directory of the Chemical Industries in Canada as of Date January 1, At the request of the Honorary Advisory Council for Scientific and Industrial Research, the Dominion Bureau of Statistics has undertaken a survey of Cana dian Chemical Industries, and the Report herein presented constitutes the first phase of the work.

Market Groups Production for most major market groups rose in September. The index for consumer goods moved up 0. The indexes for business equipment and for defense and space equipment each advanced 0. Among nonindustrial supplies, the index for construction supplies decreased in September, but the index for business supplies increased after declining in the previous two months. The output of industrial materials moved up 0. Industry Groups Manufacturing output moved up 0. Factory output advanced 2. In September, the indexes for durables and for other manufacturing publishing and logging rose, while the index for nondurables edged down. Production rose for most major categories within durable manufacturing. The largest increases were posted by motor vehicles and parts, wood products, and primary metals, while the only sizable decline was recorded by nonmetallic mineral products. Mining output increased 0. The index for utilities was unchanged in September, as a decline in electric utilities offset an increase in natural gas utilities. Capacity utilization for manufacturing edged up in September to The operating rates for durables and for other manufacturing increased, but the rate for nondurables decreased. The utilization rate for mining edged down to The utilization rate for utilities moved down to Revision of Industrial Production and Capacity Utilization The Federal Reserve Board plans to issue its annual revision to the index of industrial production IP and the related measures of capacity utilization around the end of the first quarter of The Economic Census for will not be available from the U. Census Bureau by early , so no new annual benchmark data will be included for manufacturing. Other annual data, including information on the mining of metallic and nonmetallic minerals except fuels , will be incorporated. The updated IP indexes will include revisions to the monthly indicator either product data or input data and to seasonal factors for each industry. In addition, the estimation methods for some series may be changed. Any modifications to the methods for estimating the output of an industry will affect the index from to the present. Capacity and capacity utilization will be revised to incorporate data through the fourth quarter of from the U. Geological Survey, the U. Department of Energy, and other organizations. The statistics in this release cover output, capacity, and capacity utilization in the U. Manufacturing comprises NAICS manufacturing industries sector plus the logging industry and the newspaper, periodical, book, and directory publishing industries. Logging and publishing are classified elsewhere in NAICS under agriculture and information, respectively , but historically they were considered to be manufacturing and were included in the industrial sector under the Standard Industrial Classification SIC system.

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Chapter 8 : â€¢ Biggest chemical companies worldwide | Statista

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Chemical industry in the United States U. The United States is the largest national producer of chemical products globally. Including the pharmaceutical sector, its chemical output value was more than billion U. According to the Bureau of Economic Analysis, the value added by U. With a revenue of In , several of the leading global chemical companies announced mergers, effectively changing the dynamics of the global chemical industry. With the exception of Germany, the U. In , chemical exports were worth some billion U. Most of it was generated through exports to the Asia-Pacific region. The leading countries of destination for chemical exports from the U. In , these imports were worth around billion U. Corresponding with its dimension, the chemical industry is an important employer. Approximately thousand people work at chemical companies within the United States, including the pharmaceutical sector. This number is distinctly lower than in the late s, when almost one million employees were reported. In , an average U. In , almost 91 billion U. Accordingly, the United States is the global leader in developing new chemical and pharmaceutical entities. This text provides general information. Statista assumes no liability for the information given being complete or correct. Due to varying update cycles, statistics can display more up-to-date data than referenced in the text.

Chapter 9 : List of industrial disasters - Wikipedia

Directory of the chemical industries in Canada as of date January 1, By Canada. Dominion Bureau of Statistics. and Sidney Jabez Cook. Abstract.

These people brought with them stone and bone tools. These took the form of arrowheads , axes , blades , scrappers, needles, harpoon heads and fishhooks used mostly to kill animals and fish for food and skins. They also brought fire , which they used for heating their dwellings and for cooking which was done on open fires. There were no clay pots or ovens. In the Arctic, the Innu used stick frames covered with animal skins for shelter during the summer months, while they built houses made of snow or igloos during the harsh winter. On the plains, native peoples used the well known teepee. This consisted of a number of poles arranged to form a conical structure which was in turn covered with animal skins. In central Canada, the long house was popular. This large structure was built from interwoven branches and could house 70 to 80 people. Several of these structures would be built together to form a village which was often surrounded by a palisade of logs stuck vertically into the ground as protection from hostile tribes. On the west coast, native peoples constructed dwellings made from heavy timber. Transportation techniques were simple. The aboriginal peoples did not have the wheel, horses or the sail. The paddle powered canoe was the most common means of transport and was especially practical during the summer, considering the large number of lakes and rivers that characterized the topography. The dugout was favoured in the waters off the west coast. Summer travel also saw use of the travois , a simple type of sled that was pulled over the ground by a dog and used to transport a light load. In the winter snow shoes made walking in the deep snow practical. Winter transport in the Arctic made use of dog teams , and in warmer summer months, use of kayaks was common. Clothing was made of animal skins, which were cut with stone and bone tools and sewn with bone needles and animal sinews. Native peoples did not have textiles. For the most part native peoples were hunters and gatherers, chasing large animals, and fishing for a source of protein. Wild plants and fruits that also an important food source. A common, easily stored and readily transportable food was pemmican , dried powdered meat mixed with fat, berries and "vegetables". In central Canada, there was limited agriculture which allowed the storage of some food during times of privation. Of note was the fact that they did not have the plough or draught animals. The first peoples had techniques for dealing with disease. Medicines included those made from high bush cranberries, oil of wintergreen and bloodroot. A type of tea made from the bark of the spruce or hemlock could prevent or cure scurvy. The first peoples did not have a written language. Their extensive knowledge of the natural world and information relating to their customs and traditions was passed orally. Weapons of war were made by hand from wood and stone. The long range weapon of these times was the bow and arrow with an effective range of up to metres. Close in fighting was conducted with a range of simple armaments including stone-tipped spears, stone axes tomahawks , stone blades used as knives and stone and wooden clubs of various types. Because there was no knowledge of metalworking with the exception of some small items of jewelry made from copper, weapons such as swords and metal knives were not part of this early arsenal. Please be sure that the supposed source of the copyright violation is not itself a Wikipedia mirror. October The use of wind and water as sources of power were major developments in the technological history of the new colonies. Ships with large masts and huge canvas sails maintained the link between the coloniesure Jean Talon established the Royal Dockyard on the St. Charles River in Quebec City and the first ton vessel was launched there in Work at the Royal Dockyard recommenced in and by , twelve vessels had been constructed there, including the Canada, a ton merchantman. Demand for ships was such that a second Royal Dockyard was established in , on the St. Lawrence at the foot of Cap Diamante, where the largest vessel of the French Regime, a 72 gun, ton war ship was built. The fall of New France to the British in put an end to these activities. Quebec City and Saint John, New Brunswick, both centres of timber export also became dominant centres for this activity not only in Canada but worldwide. The ships intended for trade, mostly with Britain

and common designs, included the two-masted brig and brigantine , and the popular barque , with three masts or more. Designs of between and tons, which sacrificed speed in favour of a voluminous hold, were well-suited to the carriage of timber and therefore preferred. However, the arrival of the iron and steel-hulled steamship associated with the Canadian inability to adapt to this new technology eventually bankrupted the industry in the latter years of the century. Inland travel by the coureurs de bois was by way of an Indian invention, the canoe. The York boat and bateau were also popular for travel on inland waters. The York boat was larger, more stable, and had a greater carrying capacity than the canoe. The first was built in and numbers of these craft navigated the rivers of the northern prairie region as far west as Fort Chipewyan until replaced by the steamboat in the 19th century. Within settlements, transport was often simply a matter of walking around town. The horse, introduced by the new arrivals in , also provided a new and convenient mode of transport. The wooden cart, wagon and carriage, made possible by the introduction of the wheel in combination with the horse, dramatically improved the transport of people and goods. The first graded road in Canada was built by Samuel de Champlain in and linked the settlement at Port Royal to Digby Cape, 16 kilometres away. By Quebec City and Montreal were connected by a road, Le chemin du roi, along the north shore of the St. Most roads were of very poor quality especially in wet weather. To overcome this problem logs were often placed side by side crosswise to cover ruts, puddles and mud holes. The result was a more solid but very bumpy surface that was referred to as a corduroy road. Work on what would be called the, "longest street in the world", formally known as Yonge Street , began in York Toronto , in under the direction of Deputy Surveyor General Augustus Jones. Initially a trail, it ran from Eglington Avenue to St. Albans Holland Landing and later much further north. The task of widening the path into a road fell to local farmers. Communication, symbolic language[edit] The introduction of written language and mathematics to the new world was of paramount importance. The letter, Roman-based alphabet that formed the basis for French and English words was arguably much more flexible that the pictographs that characterized eastern languages. The pen along with ink and paper made written communication possible and allowed private individuals, businessmen, the clergy and government officials to produce the documents essential for social, commercial, religious and political intercourse. This created a need for mail service. Messages were originally carried between settlements on the St. After , the road between Montreal and Quebec was used by a special courier to carry official dispatches. In a post office was opened in Halifax by Benjamin Franklin, the Post Master of the British colonies, as part of a trans-Atlantic mail service that he established between Falmouth, England and New York. The War of American Independence seriously disrupted mail service in Canada but by peace had been restored and Hugh Finlay was appointed Post Master for the northern colonies in The path chosen took 15 weeks for a round trip! Although the written word was a vital part of communications, French colonial policy opposed the establishment of newspapers in New France. The Montreal Gazette was founded in that city in by Fleury Mesplet. These publications were simple affairs, typeset by hand, consisting of only a few pages, produced in limited quantities on simple presses and of limited distribution. Energy[edit] Wind power was used to some to turn the sails of the windmill, which did not come into widespread use. Animal power in the form of the horse or ox was used to work the fields. The first horses were introduced to New France in Fire from a wood or oil fuel source was not new but the use of stone fireplaces and ovens along with metal pots and pans dramatically changed the nature of cooking. Industry[edit] Between the s and , Basque whalers whaling frequented the waters of Newfoundland and the north shore of the Gulf of St. They constructed stone ovens ashore for fires to melt whale fat. However, as whales became scarce, the cod fishery fishing off the Grand Banks of Newfoundland became hotly contested by the British and French, in the 16th and 17th centuries. The British used small boats close to shore from which they caught the cod with hook and line. They practised the "dry fishery" technique which involved shore based settlements for the drying of cod on flakes or racks placed in the open air for their subsequent transport back to Europe. The French on the other hand practised the "green fishery" which involved processing the catch with salt aboard ship. At the same time a fleet of schooners fishing for cod, halibut, haddock, and mackerel became prominent off the Atlantic coast.

The use of the long line and purse seine net increased the size of the catch. It is ironic that a phenomenon as fickle as fashion would be responsible for the economic development and exploration of half a continent, but such was the case with the fur trade in North America between and The skins came from animals trapped by the native peoples and worn as clothing during the long cold Canadian winter. The skins were worn with the fur side next to the skin, and by the spring the long hairs would be worn away, leaving the short hairs which were used to make felt. The skins were then carried by the traders in their canoes back to trading posts in Montreal or on Hudson Bay and transported by sailing ship to England or France. There they were processed by a technique involving mercury, and the felt that resulted from the treatment was used to make beaver hats. This coincidentally gave rise to the associated phenomenon of the mad hatter. A combination of diminishing beaver stocks and a change in fashion that saw a decline in the popularity of the beaver hat put an end to the trade. Agriculture was an essential colonial activity. The settlers who founded Port Royal in Acadia in drained coastal marshes with a system of dikes and grew vegetables, flax and wheat and raised livestock. After , the British promoted the Maritimes as a source of hemp for rope for the Royal Navy, with moderate success. Mixed farming , the growing of wheat and the raising of livestock would characterize the nature of maritime agriculture well into the midth century. In , Louis Hebert a colonist in Quebec began to raise cattle and grow peas, grain and corn on a very small plot. In the s, charter companies promoted agriculture and settlers cleared forested land with the use of axes, oxen, horses and asses.