



Concrete Services International, LLC

WHO WE ARE

FOR OVER 25 YEARS, OUR FORMULATION FACILITY AND FACTORY HAS BEEN PROVIDING NEW AND CREATIVE SOLUTIONS FOR A BROAD RANGE OF THE CONCRETE INDUSTRIES PROBLEMS.

BY MERGING INNOVATIVE MECHANICAL DESIGN WITH **CSI'S** PROPRIETARY NANO COLLOIDAL CHEMISTRIES, SAFE AND ENVIRONMENTALLY FRIENDLY SOLUTIONS FOR MANY DIFFICULT CHALLENGES HAVE BEEN DISCOVERED.

OUR MANUFACTURER HAS HELD A VARIETY OF PATENTS FOR MECHANICAL DESIGNS, AS WELL AS SEVERAL PROPRIETARY NANO CHEMICAL FORMULATIONS.

CSI IS PROUD TO EXPAND ITS EFFORTS INTO THE CREATION OF...

SAFE, ECO-FRIENDLY, PLANT-BASED NANO SOLUTIONS THAT INCLUDE:

- **CLEANERS**
- **DEGREASERS**
- **SOLVENTS**
- **RUST AND STAIN REMOVERS**
- **CONCRETE SEALERS**

CSI IS RAPIDLY EMERGING AS A NATIONAL LEADER IN THE SHIFT FROM THE PRODUCTION AND USE OF HAZARDOUS CHEMICALS TO OFFERING SAFE, NON-TOXIC, ORGANIC SOLUTIONS.

CSI'S COLLOIDAL PRODUCTS ARE BEING USED IN NORTH, CENTRAL AND SOUTH AMERICA, ASIA, EUROPE AND ARE NOW AVAILABLE IN CANADA.



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OUR MANUFACTURING PROCESS IS BASED ON THE SCIENCE OF COLLOIDAL CHEMISTRY THAT PRODUCES A NANO SCALE COLLOIDAL MICELLE, THE WORKHORSE BEHIND OUR PRODUCTS' EFFECTIVENESS AS A CLEANING AND DEGREASING AGENT.



THE RESEARCH EFFORTS OF OUR FORMULATORS ARE FOCUSED ON:
DEVELOPMENT AND PRODUCTION OF PRODUCTS THAT ARE:

- ✓ SAFE AND USER FRIENDLY
- ✓ NON-TOXIC, NON-HAZARDOUS
- ✓ ENVIRONMENTALLY RESPONSIBLE
- ✓ ALTERNATIVE PRODUCTS THAT EFFECTIVELY WORK
- ✓ APPLICATION SPECIFIC PRODUCTS FOR SITE REMEDIATION AND CLEAN UP IN THE CONCRETE AND CEMENT INDUSTRY.
- ✓ DEVELOPMENT OF COLLOIDAL BASED CONCRETE CLEANERS AND SEALERS
- ✓ TO REPLACE AND REDUCE THE USE OF TOXIC CHEMICALS.

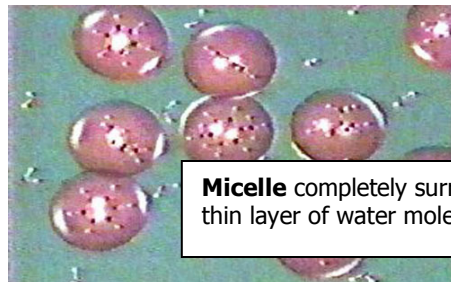
OUR DEDICATED TEAM OF RESEARCHERS AND STAFF ARE WORKING TOGETHER WITH NUMEROUS UNIVERSITIES AND THE PUBLIC SECTOR TO CREATE NEW PRODUCTS THAT MINIMIZE PEOPLE'S EXPOSURE TO TOXIC MATERIALS AT HOME, AT WORK AND IN THE ENVIRONMENT. **CSI's** PRODUCT OFFERINGS REPRESENT THE CULMINATION OF MANY YEARS OF RESEARCH AND DEVELOPMENTAL WORK THAT HAS FULLY REALIZED OUR HIGH STANDARDS.

COLLOIDAL CHEMISTRY EXPLAINED



CSI UTILIZES NANOTECHNOLOGY TO CREATE ITS POWERFUL CLEANING SOLUTIONS. OUR MANUFACTURING PROCESS EMBRACES A BRANCH OF ENVIRONMENTAL SCIENCE CALLED COLLOIDAL CHEMISTRY, TO PRODUCE A MICROSCOPIC PARTICLE CALLED A MICELLE. THIS MICELLE IS COMPRISED OF A COLLECTION OF LINEAR MOLECULES OF FATTY ESTERS AND FATTY ACIDS CLUMPED TOGETHER IN THE SHAPE OF A SPHERE THAT IS ABOUT THE SIZE OF 20 HYDROGEN ATOMS, OR ABOUT ONE TO FOUR NANOMETERS. THESE LINEAR MOLECULES HAVE A WATER ATTRACTING HEAD AND A WATER REPELLING TAIL.

BECAUSE MICELLES HAVE AN INTERIOR THAT CONSISTS OF TAILS, THAT DO NOT LIKE WATER, (HYDROPHOBIC) BUT ARE LINED ON THE OUTSIDE WITH HEAD GROUPS THAT DO LIKE



Micelle completely surrounded by a thin layer of water molecules.



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COLLOIDAL CHEMISTRY EXPLAINED (CONT'D)

WATER (HYDROPHILIC), MICELLES PROVIDE A WAY TO DISSOLVE MOLECULES THAT DO NOT LIKE WATER, IN WATER.

FURTHERMORE, THE VASTLY INCREASED RATIO OF SURFACE AREA TO VOLUME PROMOTES SURFACE PHENOMENA THAT INCREASES THE ABILITY OF THE MICELLES TO REACT WITH OTHER SUSPENDED MATERIALS. IT IS AT THIS SCALE THAT QUANTUM PHYSICS TAKE OVER FROM CLASSICAL PHYSICS AND THE PROPERTIES OF ELEMENTS CHANGE CHARACTER IN NOVEL WAYS.

MICELLES ARE ACTIVATED WHEN MIXED WITH SUFFICIENT AMOUNT OF WATER SUCH THAT EACH MICELLE IS THEN COMPLETELY SURROUNDED BY A THIN LAYER OF WATER MOLECULES. THE OUTER HYDROPHILIC SHELL AGGRESSIVELY SEARCHES FOR AND BONDS WITH WATER MOLECULES, MAKING THEM HYPER-MOBILE.

MICELLES REACT WITH OILS AND OTHER PROCESS INGREDIENTS TO MAINTAIN THEM IN SUSPENSION. AS WELL, THE MICELLES "NANO-SIZE" ADJUNCT ACTIVE INGREDIENTS RESULT IN A REDUCED AMOUNT OF THESE ACTIVE INGREDIENTS BEING NEEDED TO ACCOMPLISH A SPECIFIC TASK.

THE EXTREME SMALL SIZE OF THESE HIGHLY MOTILE PARTICLES ENABLES THEM TO PENETRATE INTO POROUS SURFACES AND THE INTERSTICES OF LARGER COMPLEX MOLECULES.

IN A REPORT ON NANOTECHNOLOGY, THE ETC GROUP NOTED THAT A SINGLE GRAM OF CATALYST MATERIAL THAT IS MADE UP OF 10 NANOMETER PARTICLES IS ABOUT 100 TIMES MORE REACTIVE THAN THE SAME AMOUNT OF THE SAME MATERIAL MADE OF ONE MICROMETER SIZED PARTICLES.

NOTE: A MICRON IS 1,000 TIMES LARGER THAN A NANOMETER

CSI's LINE OF PRODUCTS PRODUCE PARTICLES THAT ARE HALF THE SIZE USED IN THE ABOVE ANALOGY, IMPLYING AN EVEN GREATER ABILITY TO REACT.

THE ACTION OF A SINGLE MICELLE IS MULTIPLIED BY BILLIONS OF OTHER MICELLES. THE MOLECULAR LEVEL EMULSIFICATION PROCESS PENETRATES HIGHLY VISCOUS AND STICKY MATERIALS, LIFTING THEM FROM THE SURFACE TO WHICH THEY ARE ADHERED.

THE ONLY KNOWN CLEANING CHALLENGES WHERE COLLOIDAL MICELLES DO NOT WORK ARE WITH CERTAIN SYNTHETIC DEPOSITS. HOWEVER, THEY DO WORK ON ALL HYDROCARBON (OIL) BASED JOBS THAT REPRESENT 99% OF ALL CLEANING CHALLENGES.

IF THE SOIL OR STAIN IS HYDROCARBON OR ORGANIC BASED, A SPECIFIC **CSI** PRODUCT WILL DO THE JOB FOR YOU.