



Healthier Way to Life

RELYON

A BROAD-SPECTRUM BIOCIDES FOR WASTE WATER TREATMENT

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Prepared by :-

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An ISO 9001:2015 certified company

WHAT IS RELYON:

RELYON IS A TWO-COMPONENT LIQUID KIT THAT DELIVERS A 0.76% CHLORINE DIOXIDE SOLUTION. **RELYON** DOES **NOT** GENERATE BY-PRODUCTS KNOWN FROM CHLORINE DIOXIDE (e.g. CHLORITE, CHLORATE, CHLORIDE OR FREE CHLORINE). **RELYON CAN BE CONSIDERED FAR MORE ADVANCED THAN CHLORINE DIOXIDE GENERATED IN CLASSICAL WAYS.**

FURTHER **RELYON** IS NOT EXPLOSIVE AND HAS A CHEMICAL HALF TIME OF 30-60DAYS (DEPENDING ON STORAGE CONDITIONS). LIKE OZONE, CHLORINE DIOXIDE IS SOLUABLE AS A TRUE GAS. THE CIO₂ MOLECULE REMAINS A TRUE GAS IN SOLUTION-MAKING IT MORE ENERGETIC AND ABLE TO REACH ALL POINTS IN A SYSTEM. BECAUSE IT IS A TRUE GAS AND SOLUABLE IN VIRTUALLY ANYTHING, IT CAN PENETRATE THE BACTERIAL SLIM LAYER (BIOFILM). FINALLY, CHLORINE DIOXIDE BREAKS DOWN TO SODIUM CHLORIDE. THIS ALONG WITH THE FAILURE TO FORM TOXIC AND CARCINOGENIC CHLORINATION BY-PRODUCTS AND PRODUCE A BUILD-UP OF TOXIC ORGANIC OR INORGANIC BY-PRODUCT LIKE BROMATES MAKES CHLORINE DIOXIDE THE **MOST ECO-FRIENDLY BIOCID**E THAT CAN BE USED.

RELYON IS EFFECTIVE AS BOTH A DISINFECTANT AND AN OXIDANT IN WASTE WATER TREATMENT. **RELYON** DOES NOT SIGNIFICANTLY HYDROLYZE IN WATER, THUS IT RETAINS BIOCIDAL ACTIVITY OVER A BROAD PH RANGE. **RELYON** IS NOT REACTIVE WITH AMMONIA AND MOST NITROGEN-CONTAINING COMPOUNDS AND THUS IS EFFECTIVE AT LOWER DOSE LEVELS THAN CHLORINE. IT DESTROYS PHENOLICS, SIMPLE CYANIDES AND SULPHIDES BY OXIDATION. FOR ODOUR CONTROL. **RELYON** WILL OXIDIZE SULPHIDES WITHOUT THE FORMATION OF COLLOIDAL SULFUR. IT IS ALSO USE TO OXIDIZE IRON AND MANGANESE COMPOUNDS.

2. RELYON GERMICIDAL SPECTRUM:

BACTERIA:

E.COLI	COXIELLA BURNETTI
PSEUDOMONAS AERUGINOSA	CAMPYLOBACTER JEJUNI
PSEUDOMONAS SPECIE	FLAVOBACTERIUM SPECIES
ENTEROBARCTER CLOACEAE	YERSINIA ENTEROLITICA
ENTEROBARCTER HAFNIA	CLOSTRIDIUM SPOROGENUS
PROTEUS VULGARIS	CLOSTRIDIUM DIFICILE
KLEBSIELLA PNEUMONIAE	CLOSTRIDIUM PERFINGENS
SALMONELLA TYPHI	FUSOBACTERIUM NUCLEATUM
SALMONELLA ENTERIDITIS	BACILLUS SUBTILIS
SALMONELLA GALLINARUM	BACILLUS CIRCULANS
SALMONELLA TYPHIMURIUM	BACILLUS MEGATARIUM
SALMONELLA CHOLERAESUIS	BACILLUS CEREUS

SALMONELLA TYPHOSA
CORYNEBACTERIUM NUCLEATUM
SARCINAE LUTAE
STREPTOCOCCUS PYROGENES
STEP 1,2,3
MYCOBACTERIUM SMEGMATIS

BIFEDIBACTER LIBERIUM
STAPHYLOCOCCUS AUREUS
STAPHYLOCOCCUS EPIDERMIA
STREPTOCOCCUS FAECALIS
MYCOBACTERIUM BOVIS
MYCOBACTERIUM KANSAII

FUNGI:

CANDIDA ALBICANS
SCOPULARIOSIS SPECIES
TRICHOPHYTON MENTAGROPHYTES
MUCOR SPECIES
SACHROMYCES CEREVISIAE

TRICOPHYTON RUBRUM
ASPERGILLUS NIGER
ASPERGILLUS FLAVUS
FUSARIUM SPECIES
FONSECAEA PEDROSOI

VIRUS:

HERPES VIRUS 1
HERPES VIRUS 2
ADENOVIRUS ECHOVIRUS
COXSAKIEVIRUS
INFLUENZA
FELINE PAROVIRUS
MOUSE FLU
MINUTE VIRUS OF MICE (MVM)
NEW CATTLE DISEASE VIRUS
IRIDOVIRUS

POLIOVIRUS
ENCEPHALOMYOCERDITIS (EMS)
VACCINA VIRUS
VESICULAR STOMATITIS VIRUS (VSV)
PARA INFLUENZA
BLUETONGUE VIRUS
MOUSE HEPATITIS VIRUS (MHV)
MOUSE ENCEPHALOMYELITIS VIRUS
MOUSE POLIO VIRUS (MEV)
PERTIVIRIES – TOGAVIRIDAE

OTHER:

VIBRIO CHOLERA
MYCOPLASM

CULEX QUINQUIFASIATUS

3. COST COMPARISON:

AN ABSOLUTE COMPARISON PER VOLUME OF OTHER DISINFECTANTS DOES NOT PROVIDE THE REAL COST COMPARISON WITH RELYON. OTHER COST FACTORS RANGE FROM:

(CHLORINE) REACTOR COST OF OWNERSHIP, INCLUDING MAINTENANCE, CERTIFICATION & RE-CERTIFICATION.

SECURITY MEASURES & RISK AND LIABILITY INSURANCE POLICY.

TRAINING, CERTIFICATION AND RE-CERTIFICATION OF QUALIFIED PERSONNEL.

ENVIRONMENTAL, HEALTH & SAFETY FACTORS.

HAZARD TRANSPORT COST.

USE OF ADDITIONAL CHEMICALS (e.g. PH LEVEL STABILIZERS).

THE COST OF **NOT** DELIVERING THE REQUIRED BIOCIDAL RESULTS.

4. APPLICATION AREAS AND DOSAGE:

THE REQUIRED DOSAGE VARIES WITH WATER CONDITIONS AND THE DEGREE OF CONTAMINATION PRESENT. FOR MOST MUNICIPAL AND OTHER WASTE WATER SYSTEM, A **RELYON** RESIDUAL CONCENTRATION OF UP TO 5 PPM IS SUFFICIENT TO PROVIDE ADEQUATE DISINFECTION. FOR SULFIDE ODOUR CONTROL, BETWEEN PH 5-9, A MINIMUM OF 5.2 PPM SHOULD BE APPLIED TO OXIDIZE 1 PPM OF SULFIDE (MEASURED AS SULFIDE ION). FOR PHENOL DESTRUCTION, AT PH LESS THAN 8 A DOSAGE OF 1.5 PPM **RELYON** WILL OXIDIZE 1 PPM PHENOL; AT PH GREATER THAN 10, A DOSAGE OF 3.3 PPM **RELYON** WILL OXIDIZE 1 PPM PHENOL.

5. SUMMARY:

RELYON –ClO₂, WHICH HAS BEEN DEVELOPED BY EXPERIENCED SCIENTISTS, IS A VERY POTENT BIOCIDAL WHILE AT THE SAME TIME BEING STABLE, RELIABLE & ENVIRONMENT FRIENDLY. FREQUENTLY, SYSTEMS THAT REQUIRE MULTIPLE BIOCIDES FIND EQUAL OR BETTER MICROBIOLOGICAL CONTROL WITH JUST **RELYON**.

RELYON IS A SPECIFIC OXIDIZER AND HAS LITTLE TO NO REACTIVITY WITH MANY PRODUCTS THAT MAY BE FOUND IN WATER. IT DOES, HOWEVER, REACT WITH SOME PRODUCTS READILY. THESE PRODUCTS INCLUDE MANY AMINO ACIDS (SULFUR CONTAINING AMINO ACIDS), CYANIDE, HYDROGEN SULFIDE, FORMALDEHYDE, IRON, MANGANESE AND PHENOLIC COMPOUNDS. THIS QUICK REACTIVITY WITH AMINO ACID, THE BUILDING BLOCKS OF LIFE, IS ONE OF THE REASONS THAT **RELYON** IS SUCH A STRONG BIOCIDAL.

MANY APPLICATIONS FOR CHLORINE DIOXIDE CAN BE FOUND. THERE IS A BIG LIST OF CONSIDERATIONS AND APPLICATIONS THAT MAKE CHLORINE DIOXIDE INTERESTING TO USE ABOVE THE KNOWN TRADITIONAL DISINFECTANTS



THE LIST IS LONG AND INCLUDES TREATMENT FOR POTABLE WATER,FOOD,MEMBRANES,LEGIONELLA,ALGAE,BIOFILM,AND PROCESS APPLICATIONS,CLEANING IN PLACE,AIR TREATMENT etc. ALSO ON THE LIST ARE ISSUES INCLUDING SYNERGY WITH WATER TREATMENT CHEMICALS, USE COST, SYSTEM PERFORMANCE, ENVIRONMENTAL IMPACT, SELECTIVE OXIDIZER, AND WIDE PH RANGE.

ONE FACT MANY PEOPLE SEEM TO AGREE UPON IS THAT THERE ARE A LOT OF GOOD REASONS TO USE RELYON.

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