zsivira®
Smart Chemistry

ZSIVIRA

Bio-Based Chemicals For Bio-Based Economy

LEATHER WORKING GROUP

Member:
Ø ZDHC
Zero Discharge of Hazardous Chemicals

TUV NORD
ISO 9001

ZSIVIRA

A large part of the world is slowly transitioning from having an economy dependent on fossil fuel to one that is more environmentally sustainable, centered around BIO-MASS. To achieve this, countries have started looking into BIO-BASED chemicals from various biomass sources. In 2004, the United States Department of Energy (DoE) highlighted a dozen platform or base chemicals including Enzymes that could possibly replace the fossil or petroleum-based building-blocks in value-added chemicals.

Production of industrial chemicals using "Renewable Biomass" feedstock is becoming increasingly important to address limited fossil resources, climate change and other environmental problems.

To develop high-performance microbial cells which can also be called as Bio-Based chemicals, equivalent to chemical plants, micro-organisms undergo systematic metabolic engineering to efficiently convert biomass-derived carbon sources into target chemicals.

Over the past two decades, many engineered micro-organisms capable of producing natural and non-natural chemicals have been developed.

At **ZSIVIRA**, *We are into the process of making a comprehensive bio-based chemicals map that highlights the strategies and pathways of single or multiple biological reactions, chemical reactions and combinations thereof towards production of particular chemicals of Bio Interest mainly for the leather industry.*

Future challenges on selection of raw materials to the commercial production of Bio Based Chemicals are also taken into consideration to enable production of even more diverse chemicals and more efficient production of chemicals from renewable feedstocks which translates our society into "Bio-Economy".

Bio-Economy refers to the sustainable production and conversion of biomass for a range of industries like… textile, leather, food, health, fiber, and diversified industrial products which also includes Bio-Energy, through the application of biotechnologies in bio-factories using non-food plants and trees, for industrial purposes.

Almost 10 kinds of Bio-Based Chemicals are identified so far as follows :

1. *Bio-Plastics*
2. *Polyactic Acid*
3. *Polyhydroxyl Alconates*
4. *Plant Oils*
5. *Fatty Acids and their esters*
6. *Bio-Lubricants*
7. *Bio-Solvents*
8. *Bio-Surfactants*
9. *Bio-Synthetics*
10. *Bio-Inks & Bio-Dyes (Natural Colours)*

Bio-Chemicals fo r Tanning :

As a first measure on adopting Bio-Chemistry in **ZSIVIRA**, *it has been investigated preliminarily we could use the above 10 Bio-Based Chemicals in various stages of leather tanning part. Continuous R&D is being done to introduce Bio-Based Chemicals in leather finishing segments also.*

ZSIVIRA *is happy and proud to be part of BIO-ECONOMY from the initial concept stage itself. We have introduced a couple of products which could complement the tanneries for their Bio-Chemical Compliance (BCC).*

To name few products which is Bio-Based above 60% is as follows :

PRODUCT	BIO CONTENT
ZSIVITAN PH	100%
ZSIVITAN PA	100%
ZSIVIROL GSIN	97%
ZSIVITAN PCK	90%
DYNAMOL LSW	82%
ZSIVITAN PCW	72%
ZSIVIROL LNM	70%
ZSIVIROL BAZ	70%
ZSIVIROL TRG1	62%

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