



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)

Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Agreements and MoUs

Index

Sl.no	Particulars	Year	Page No
			+
1.	Bio- Medical wastes - Agreements and MoUs	2021-2022	3-5
2.	Bio- Medical wastes - Agreements and MoUs	2022-2023	6-8
3.	Pollution Control Board	2021-2027	9-13
4.	E-Waste Disposal - Agreement	2022-2026	14-19
5.	SOP For Disposal and Liquid Waste	2021-2022	20-27

Principal

PRINCIPAL
The Oxford College of Engineering
Bommanahalli, Hosuz Rom
Bengaluru-560 068



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.
Approved by A.I.C.T.E. New Delhi.
Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

The sister concerns, The Oxford College of Engineering and Oxford Dental College are situated next to each other in same campus. The Biomedical Wastes produced by these two institutes are handled by same vendor (MARIDI) for further processing. Hence the agreements and MoUs remains same for both the institutes.

Principal PRINCIPAL

The Oxford College of Engineer:
Bommanahalli, Hosuz Russ,
Bengaluru-560 068

क्षेत्र क्

CHILDREN'S EDUCATION SOCIETY (Regd.) THE OXFORD COLLEGE OF ENGINEERING

(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Bio- Medical wastes Agreements and MoUs for 2020-2021



INDIA NON JUDICIAL

Government of Karnataka

e-Stamp

Certificate No.
Certificate Issued Date
Account Reference
Unique Doc. Reference

Purchased by Description of Document Description

Consideration Price (Rs.)

First Party Second Party Stamp Duty Paid By Stamp Duty Amount(Rs.) : IN-KA76395934792960T

16-Aug-2021 01:13 PM

NONACC (BK)/ kakscub08/ BANGALORE4/ KA-BA

SUBIN-KAKAKSCUB0814298188209885T

MARIDI BIO INDUSTRIES PVT LTD

Article 12 Bond AGREEMENT

(Zero)

MARIDI BIO INDUSTRIES PVT LTD

OXFORD DENTAL COLLEGE BOMMANAHALLI

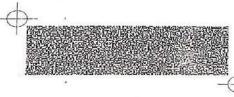
MARIDI BIO INDUSTRIES PVT LTD

50

(Fifty only)







Please write or type below this line

MEMORANDUM OF UNDERSTANDING Reg.No: 338

M/s. Maridi Bio Industries Pvt Ltd., having its registered office at No. 8, SUNAGA ARCADE, 4th Floor, 1st Main, 8th Cross, S.R.nagar, Bangalore-560027, Phone No: 080-41512958/22103270, Email id: maridibmw@gmail.com .and having Its Plant at Sy.No.1/37 & 1/38, 35th Milestone, Gabbadi Kaval, Kanakapura Road, Ramanagar District, here in after referred to as, M/s. Maridi Bio Industries Pvt Ltd. represented by its Authorized Signatory and M/s. OXFORD DENTAL COLLEGE-BOMMANAHALLI its Dental College at Bommanahalli Circle, Bangalore-

institutoriy-filety

The admensionly of the Stamp certificate should be verified at lower sholestang coming a stamp control of the Stamp certificate and as admittable on the website? Metale spir integers it much.

The only of thecting the legitimary is on the users of the certificate. All the certificate and also control of the certificate and also control of the certificate and also control of the certificate and any discrepancy please inform the furgional automative.

Children's Education Society (I be seed any discrepancy please inform the furgional automative.)



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

560068 Mob: 9980135517. Email: deandirectortodc@gmail.com. Here in after referred to as M/s. **OXFORD DENTAL COLLEGE** is hereby agreed and come to the Memorandum of Understanding on this 17th Day of August month year 2021 as detailed below:

- a. M/s. Maridi Bio Industries Pvt Ltd. with consent from Karnataka State Pollution Control Board is having a common treatment facility for Managing Bio-Medical Waste in Ramanagaram district at 36th Mile Stone, Kanakapura Road. The facility is having a state of art Auto clave system along with the shredder and Incinerator.
- b. M/s. OXFORD DENTAL COLLEGE having gives its bio-medical waste properly packed in color-coded bags as per pollution control Board regulations for treatment and final disposal to M/s. Maridi Bio Industries Pvt Ltd. The waste should be given at one single point by the M/s. OXFORD DENTAL COLLEGE at given time of M/s. Maridi Bio Industries Pvt Ltd. Vehicle.
- c. M/s. Maridi Bio Industries Pvt Ltd. will charge a price of Rs.8800/-Per Month (Rupees Eight Thousand Eight Hundred only); (Excluding Poly bags) transportation, treatment and final disposal of biomedical waste. This Price will be fixed for a period of Two (1) year from date of this agreement and thereafter there will be 12% (Twelve Percent) escalations in the price for every one-year on existing rate.
- d. M/s. OXFORD DENTAL COLLEGE will not enter into any agreement with any other party or organization for the waste treatment and disposal unless cancel of this agreement.
- e. M/s OXFORD DENTAL COLLEGE is assuring that payment should be made through Account Payee cheque In favour of M/s. Maridi Bio Industries Pvt Ltd. on or before 5th of every month.
- M/s. Maridi Bio Industries Pvt Ltd. is not responsible for any cash payments and also we will collect cheque bounce charges.
- g. In case of non-receipt of payment on the agreed date from M/s. OXFORD DENTAL COLLEGE M/s. Maridi Bio Industries Pvt Ltd., will stop the collection of waste immediately with intimation to Karnataka State Pollution Control Board. The delayed payments will be collected with an interest of 18% per annum.
- h. M/s. Maridi Bio Industries Pvt Ltd. will collect bio medical Waste Regularly as per Mentioned in Registration Form (Except Sunday) and treat the waste as per the regulations. M/s. Maridi Bio Industries Pvt Ltd. will not collect any General waste that is not segregated or not properly packed M/s. Maridi Bio Industries Pvt Ltd. will not collect general garbage.

PRESIDENT
Children's Education Society (R)
1st Phase, J.P. Nagar,
Enscalue - 560 UTS



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

- i. M/s. Maridi Bio Industries Pvt Ltd. will issue a proof of waste collection from M/s. OXFORD DENTAL COLLEGE as per your declarations in the application form. This will help the individual Clinic for getting compliance with the State Pollution Board. The individual Clinic/Nursing home can take their Authorization from the pollution control board by informing the board that M/s Maridi Bio Industries Pvt Ltd. treats their waste (The same has to be mentioned in the Authorization Form.
- j. In case OXFORD DENTAL COLLEGE find any irregularities in collection of waste, they can send a notice in writing to M/s. Maridi Bio Industries Pvt Ltd. for immediate action.
- k. M/s Maridi Bio Industries Pvt Ltd. will maintain their plant in good running condition all the time and ensure continuity of service as per agreement with your OXFORD DENTAL COLLEGE.
- This Memorandum of understanding is entered into on the express understanding that M/s Maridi Bio Industries Pvt Ltd. will maintain and run the facilities and collect transport and treat the waste at their plant strictly in accordance with the consent of the Karnataka State Pollution Control Board and it shall be the responsibility to obtain the consent and keep the same always current.
- m. In case of violation of any of the agreed condition of the MOU by either side. Issue of notice may terminate this MOU three months in advance by either party for terminating their respective obligations.
- n. All disputes to this understanding are subject to the Jurisdiction of the court in Bangalore only.
- o. MOU Renewal Charges of Rs.200 Extra for next Year.

p. This Agreement is effective from 01.07.2021 to 30.06.2022.

For M/s. Maridi Bio Industries Pvt Ltd

uthorized Signatory

For M/s OXFORD DENTAL COLLEGE

Authorized Signatory
PRESIDENT
Children's Education Society (R)

1st Phase, J.P. Nagar, Bangulore - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Bio- Medical wastes Agreements and MoUs for 2020-2021



MEMORANDUM OF UNDERSTANDING Reg.No: 338

M/s. Maridi Bio Industries Pvt Ltd., having its registered office at No .8, SUNAGA ARCADE, 4th Floor, 1st Main, 8th Cross, S.R.nagar, Bangalore-560027, Phone No: 080-41512958/22103270, Email id: maridibmw@maridibio.com .and having Its Plant at Sy.No.1/37 & 1/38, 35th Milestone, Gabbadi Kaval, Kanakapura Road, Ramanagar District, here in after referred to as, represented by its Authorized Signatory and M/s. OXFORD DENTAL COLLEGE - BOMMANAHALLI having its centre at bommanahalli circle, bangalore-560068. mobno:9980135517. Email; principal oxforddental@yahoo.com. Here in after referred to as M/s. OXFORD DENTAL COLLEGE - BOMMANAHALLI is hereby agreed and come to the Memorandum of Understanding on this 15th Day of September month year 2022 as detailed below:

- a. M/s. Maridi Bio Industries Pvt Ltd. with consent from Karnataka State Pollution Control Board is having a common treatment facility for Managing Bio-Medical Waste in Ramanagaram district at 36th Mile Stone, Kanakapura Road. The facility is having a state of art Auto clave system along with the shredder and Incinerator.
- b. M/s. OXFORD DENTAL COLLEGE BOMMANAHALLI gives its biomedical waste properly packed in color-coded bags as per pollution control Board regulations for treatment and final disposal to M/s. Maridi Bio Industries Pvt Ltd. The waste should be given at one single point by the M/s. OXFORD DENTAL COLLEGE BOMMANAHALLI at given time of M/s. Maridi Bio Industries Pvt Ltd. Vehicle.

M/s. Maridi Bio Industries Pvt Ltd. will charge a price of Rs.9680/Per Month (Rupees nine thousand six hundred and eighty only); (Up to
100 kgs per month, if it exceeds Rs.65/- per Kg will be charged

100 kgs

PRESIDENT
Children's Education Society (R)
Ist Phase, J.P. Nagar,
Bo 13alore - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602. Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

extra), (GST Extra as applicable) (Excluding Poly bags) transportation, treatment and final disposal of biomedical waste. This Price will be fixed for a period of one (1) year from date of this agreement and thereafter there will be 12% (Twelve Percent) escalations in the price for every one-year on existing rate.

- d. M/s. OXFORD DENTAL COLLEGE BOMMANAHALLI will not enter into any agreement with any other party or organization for the waste treatment and disposal unless cancel of this agreement.
- e. M/s OXFORD DENTAL COLLEGE BOMMANAHALLI is assuring that payment should be made through Account Payee cheque In favour of M/s. Maridi Bio Industries Pvt Ltd. on or before 5th of every month.
- M/s. Maridi Bio Industries Pvt Ltd. is not responsible for any cash payments and also we will collect cheque bounce charges.
- g. In case of non-receipt of payment on the agreed date from M/s. OXFORD DENTAL COLLEGE BOMMANAHALLI M/s. Maridi Bio Industries Pvt Ltd., will stop the collection of waste immediately with intimation to Karnataka State Pollution Control Board. The delayed payments will be collected with an interest of 18% per annum.
- h. M/s. Maridi Bio Industries Pvt Ltd. will collect bio medical Waste daily (Except Sunday) and treat the waste as per the regulations. M/s. Maridi Bio Industries Pvt Ltd. will not collect any General waste that is not segregated or not properly packed M/s. Maridi Bio Industries Pvt Ltd. will not collect general garbage.
- i. M/s. Maridi Bio Industries Pvt Ltd. will issue a proof of waste collection from M/s. OXFORD DENTAL COLLEGE BOMMANAHALLI as per your declarations in the application form. This will help the individual Clinic for getting compliance with the State Pollution Board. The individual Clinic/Nursing home can take their Authorization from the pollution control board by informing the board that M/s Maridi Bio Industries Pvt Ltd. treats their waste (The same has to be mentioned in the Authorization Form.
- j. In case OXFORD DENTAL COLLEGE BOMMANAHALLI find any irregularities in collection of waste, they can send a notice in writing to M/s. Maridi Bio Industries Pvt Ltd. for immediate action.
- k. M/s Maridi Bio Industries Pvt Ltd. will maintain their plant in good running condition all the time and ensure continuity of service as per agreement with your OXFORD DENTAL COLLEGE -BOMMANAHALLI.

ONDUSTRES PUT

This Memorandum of understanding is entered into on the express understanding that M/s Maridi Bio Industries Pvt Ltd. will maintain

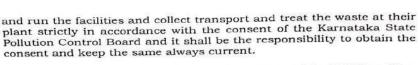
PRESIDENT
Children's Education Society (R)
1st Phase, J.P. Nagar,
Bu 13alore - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



- m. In case of violation of any of the agreed condition of the MOU by either side. Issue of notice may terminate this MOU three months in advance by either party for terminating their respective obligations.
- All disputes to this understanding are subject to the Jurisdiction of the court in Bangalore only.
- o. MOU Renewal Charges of Rs.200 (GST 18% Extra).
- p. This Agreement is effective from 01.09.2022 TO 31.08.2023.

For M/s. Maridi Bio Industries Pvt Ltd

Authorized Signatory

For M/s OXFORD DENTAL COLLEGE - BOMMANAHALLI

Authorized Signatory Children's Education Society (R) 1st Phase, J.P. Nagar, Bangalore - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Pollution Control Board from 2021-2027

	Conser	(CFE-EXP)	ad Kem	staka State Polletion Control flour		
	Consent	No. CTE-330846 Valid		Parisava Blassma,No.49, Churr Street,Bengulosu-5600		
Access	Oggan U	pto: 11/04/2027		Tele: 000-25589112/3, 255013		
	Industry Colour RED	Industry Scale LARGE		email id: heal type it gos		
	(This document contains 5 pages inchaling amerine & eschalage additional conditions)					
	Consent Order No: CTE-330846 PC8 ID: 18080 Date: 12/04/2022					
	To,					
	The Applicant.					
	Oxford Educational Inst	lutions				
	Sir,					
	Sub: Consent for Expa Act,1974 & the A	nsion of the unit in the Existir ir (Prevention & Control of Po	ng premises under the Water	(Prevention & Control of Pollutian)		
		n application submitted by the		of Partianal California and Property		
	∠inspection of t	the project site by Regional				
	Childe			2/12/2021		
	With reference to the ab	of the ECM date 24/02/2022 h	eld on 16/02/2022			
	Pollution) Act, 1981 at t	ove, Kamataka State Pollution der the Water (Prevention & C he location indicated below se	Control Board hereby according to the Pollution Act, 197 thject to the terms & condition	ls Consent for Expansion of the unit in I & the Air (Prevention & Control of is indicated in Schedule Amexed.		
	ADCAUDIG					
	Name of the Industry: Address:	Oxford Educational Institut				
	Industrial Area:	Sy. No.4/1, 4/88, 4/8A & 4/	/9, 5/1, 5/2A, 5/2B, 4/7, 7/1B	& , 7/2 of Bommanahalli, Hosur Road		
	Taluk:	Not In LA, BBMP-W-175,	Bangalore,			
	CONDITIONS:	domr-w-1/5,	District: Bangalor	e Urban		
	1. The Consent for Ex	pension is granted considering	the following assisting			
	2. This consent for esta	hlishment is valid up to 11/0	4/2027 e a .			
	 This consent for establishment is valid up to 11/04/2027 from the date of issue. The applicant shall not undertake further expansion/diversification without the prior consent of the Board. The applicant shall obtain necessary license/clearance from other relevant stanuous agencies as required under the law. 					
	I. WATER CONSU	MPTION:				
	1. The source of water		and shall attain			
		roumption shall not exceed as	and shall obtain prior concerneds	permission from the		
		Aminoral sixti tipi exceed 521	ndicated below			

Printed through KGN



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



Karnataka State Pollution Control Board Parisara Bhavana, No. 47, Church Street, Benguluru-560001 Tele: 080-25599112/3, 25581393 Fux:080-25586321 email id: hwickspeliggw.in



Industry Colour: RED

Industry Scale LARGE

(This document contains 5 pages including annexure & excluding additional conditions)

II. WATER POLLUTION CONTROL:

- The discharge from the premises of the applicant shall pass through the terminal manhole/manholes where from the Board shall be free to collect samples in accordance with the provisions of the Act/Rules made there under.
- The sewage/domestic efflluent shall be treated in Septic Tank with Soak pit. No overflow from the soak pit is allowed. The septic tank and Soak pit shall be as per IS 2470 Part-I & Part-II.
- 3. The Effluent Treatment Plant proposal is generally agreeable and shall be constructed as per the specifications mentioned in the proposal and it shall consist of following units.
- 4. The industry shall treat the domestic wastewater in the Sewage Treatment Plant (STP) as per the proposal submitted. It shall meet the standards specified in Annexure-I & shall be used on land for gardening/greenbelt
- 5. If the treatment plant does not achieve the effluent standards stipulated in this consent order and/ or if it is found to be inadequate, then the industry shall have to modify the units so as to meet the standards with prior consent of the Board.
- 6.All the treatment units shall be totally impervious.
- 7.The applicant shall provide separate flow meter for measuring the quantity of elfluents through ETP and separate energy meter and shall maintain a logbook for the verification of inspecting officers.
- 8. The applicant shall operate and maintain Treatment Plant continuously and maintain at all times to achieve the stipulated standards as per Amexure-I & also maintain regular log-books/operation records.
- 9. There shall not be any increase in generation of Domestic sewage due to proposed expansion.
- 10. There shall be no bypass or discharge of effluents either within or outside the factory premises under any
- 11. There shall not be any discharge of untreated trade/domestic sewage inside/outside the industry premises.
- 12 The applicant shall explore the possibility of reducing freshwater consumption & adopt recycling/reuse.

IIL AIR POLLUTION CONTROL:

- 1. The type of emissions, stack heights and the air pollution control equipment for the air pollution control sources to be installed as specified in Annexure-II.
- The discharge of emissions from the air pollution sources shall pass through the stacks/chimneys mentioned
 in Annexure-II where from the Board shall be free to collect the samples at any time in accordance with the provisions of the Act and Rules made there under.
- 3. The stacks shall have port holes and platforms as per the guidelines specified in Annexure-II to facilitate
- The applicant shall upgrade/modify/replace the control equipments if they are found inadequate to meet the standards stipulated with Prior permission of the Board shall be obtained for the same.
- There shall not be any other sources of air pollution from the proposed expansion
- If there is going to be any new air pollution sources in future, the project authorities shall apply and obtain consent for establishment for the same from the Board.
- Any fugitive emission has to be controlled to meet the ambient air quality standards

IV. SOLID WASTE (OTHER THAN HAZARDOUS WASTE) DISPOSAL:

- 1. The applicant shall collect, treat and dispose off all solid waste generated during construction i.e. Muck, and Garbage after construction if any in such manner so as not to cause environmental pollution.
- The details of solid wante generated from the expansion activity shall be as follows:

Page-2

e_outwardno49910-12/04/2022



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



Karnataka State Pollution Control Board Parisara Bhavana, No. 49, Church Street, Bengaluru-560001 Tele: 080-255901123, 25581383 Fax:080-25586321 email id: ho's kspch.gw.in

Industry Scale: LARGE

(This document contains

5 pages including annexuse & excluding additional conditions)

V.HAZARDOUS AND OTHER WASTES (MANAGEMENT & TRANSBOUNDRY MOVEMENT)

- The industry shall apply and obtain authorization under Hazardous and Other Wastes (Management & Transbundry Movement) Rules 2016, and comply with the conditions of the authorization. The applicant shall apply for authorization along with the consent for operation (CFO) application under the Rules in Form-I to obtain authorization and comply with conditions.
- 2. There shall not be any Hazardous Waste generation from the proposed expansion project.

VI. NOISE POLLUTION CONTROL:

The applicant shall ensure that the ambient noise levels within its premises during construction and during operation period shall not exceed w.r.t Area/Zone as per Noise Pollution (Regulation and Control) Rules, 2000 as mentioned below:-

- a) In Industrial Area 75 dB(A) Leq during day time and 70 dB(A) Leq during night time.
- b) In Commercial Area 65 dB(A) Leq during day time and 55 dB(A) Leq during night time.
- c) In Residential Area 55 dB(A) Leq during day time and 45 dB(A) Leq during night time.
- d) In Silence Zone 50 dB(A) Leq during day time and 40 dB(A) Leq during night time.
- Note: * Day time shall mean 6 am to 10 pm and Night time shall mean 10 pm to 6 am.
 - dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.
- A "decibel" is a unit in which noise is measured.
 - "A", in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.
 - Leq: It is an energy mean of the noise level over a specified period.

VIL GENERAL CONDITIONS:

- The applicant shall transport and store the raw materials in a manner so as not to cause any damage to environment, life
 and property. The applicant shall be solely responsible for any damages to environment.
- The applicant shall not commission the proposed plant for trial or regular production unless necessary
 pollution control measures are installed as "certified in this Consent Order.
- The applicant shall ensure that the treatment plant and control equipments are completed and commissioned simultaneously along with construction of the factory and exection of machineries.
- 4. The applicant shall not change or alter (a) raw materials or manufacturing process, (b) change the products or product mix (c) the quality, quantity or rate of discharge/emissions and (d) install/replace/alter the water or air pollution control equipments without the prior approval of the Board.

Page-3

e outwardno49910-12/04/2022

Printed through XGN

(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Consent For Establishment - Expand (CFE-EXP) Consent No. CTE-330846 Valid

upto: 11/04/2027 Industry Colour RED Industry Scale: LARGE Karnataka State Pollution Control Board Parisara Bhavana, No. 49, Church Street, Bengaluro, 560001 Tele: 000-25589112/3, 25581333 Fan: 1008-2558/321 emall id: hole kspelagov.in





(This document contains 5 pages including american & excluding additional conditions)

- 5. The applicant shall immediately report to the Board of any accident or unforeseen act or event resulting in release of discharge of elliuents or emissions or solid wastes etc. in excess of the standards stipulated. And the industry shall immediately take appropriate corrective and preventive actions under intimation.
- 6. The applicant is liable to reinstate or restore, damaged or destroyed elements of environment at his cost, failing which, the applicant/occurrier as the case may be shall be liable to now the entire cost of remediation or restoration in advance an amount. applicant/occupier as the case may be shall be liable to pay the entire cost of remediation or restoration equal to the cost estimated by Competent Agency or Committee.
- The Board reserves the right to review, impose additional condition or conditions, revoke, change or after the terms

8. This CFE does not give any right to the PartyiProject Authority/Industry to forego any other legal requirement necessary for setting/operation of the plant.

- 9. The applicant shall furnish point wise compliance to the conditions given under this consent for establishment within 30 days.
- 10. The applicant shall take measures to develop green belt all along the periphery of the factory premises.
- 11. This consent is issued without prejudice to any Court Cases pending in any Hon'ble Court
- 12. The applicant shall comply with all the Conditions and guidelines issued by the Board from time to time.

Please note that this is only consent for establishment issued to you to proceed with the formalities for expansion of the industry and does not give any right to proceed trial/regular production. For this purpose, separate consents of the Board for discharge of liquid effluent and the emissions to the air shall have to be obtained by remaining prescribed consent fee. The application foreoment has to be made 45 days in advance of commissioning for trial production of the plant.

The receipt of this letter may please be acknowledged.

Consent Fee paid

Rs. 125000

NOTE:

The Conditions Nilmentioned in the schedule are not applicable.

Additional Conditions:

II (Z) (6) III(2) (V(1) V(1) V(1) & VII(4) these conditions are not applicable

The project authorities shall strictly comply with the conditions stipulated in Annexune I contains pages

The CFE is issued as per the recommendations of the Enforcement Committee Meeting held on 15th & 16th February 2022 & duly approved by Member Secretary & Hontrie Chairman.

FOR AND ON BEHALF OF

KARNATAKA STATE POLIZITION CONTROL.

Encl.: Annexure-I & IL

e_outwardno49910-12/04/2022

Printed through XGN

CHILDREN'S EDUCATION SOCIETY (Regd.)

THE OXFORD COLLEGE OF ENGINEERING

(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Estel. 1974

Consent For Establishment -Expand (CFE-EXP)

Consent No. CTE-330846 Valid upto: 11/04/2027

Industry Colour, RED

Industry Scale: LARGE

Karnetaka State Poliution Control Board Parisara Etnavanu, Nu. 49, Church Street, Bengaluvu, 50001 Tele: 080-2559/112/3, 25581383 Fn: 1000-25586321 email id: ho'a kspeh gov.in

(This document contains

5 pages including america & excluding additional conditions)

COPY TO:

The Environmental Officer, KSPCB, Regional Office Bangalore Bommanahalii for information and necessary action.

Master copy (Disputch)

Constituents to be Minimum chimney height to be provided above ground level (in Mis)

Tolerance mg/NMB

Air pollution

Control pollution control
equipment to
be installed,in
addition to
chimney
col.(4)

Date of which air
pollution control
equipments shall
be provided to
achieve the
stipulated
tolerance limits
height as per
col.(4) equipment to be installed,in addition to chimney height as per

conforming to stipulated heights.

1 D.G. 1000 KVA

8 PM(mg/NM3),SO2 (PPM),NOx(PPM)

150,100,50 DIE

MA

LOCATION OF SAMPLING PORTHOLES, PLATFORMS, ELECTRICAL OUTLET.

1. Location of Portholes and approach platform:

Portholes shall be provided for all Chimneys, stacks and other sources of emission. These shall serve as the sampling points. The sampling point should be located at a distance equal to at least eight times the stack or duct dizmeter downstream from any Bow disturbance such as bend, expansion, contraction and visible flame. Further, the selected port has to be at least 2 stack/duct diameter before stack/duct exit or from any other flow disturbance. For rectangular stacks, an equivalent diameter can be calculated using following expression.

2 (Length x Width)

Equivalent Diameter =

(Length + Width)

2. The diameter of the sampling port should not be less than 100mm dia". Arrangements should be made so that the

porthole is closed firmly during the non sampling period.

3. An easily accessible platform to accommodate 3 to 4 persons to conveniently monitor the stack emission from the portholes shall be provided. Arrangements for an Electric Outlet Point off 230 V 15 A with suitable switch control and 3 Pin Point shall be provided at the Porthole location.

4. The ladder shall be provided with adequate safety features so as to approach the monitoring location with ease.

Signature Not Verified Digitally signed by Date: 2022.04 12 11:29:02 +05:30

Page-5

e_outwardno49910-12/04/2022

Printed through XGN

विद्या नवेत्र शीभूत

CHILDREN'S EDUCATION SOCIETY (Regd.) THE OXFORD COLLEGE OF ENGINEERING

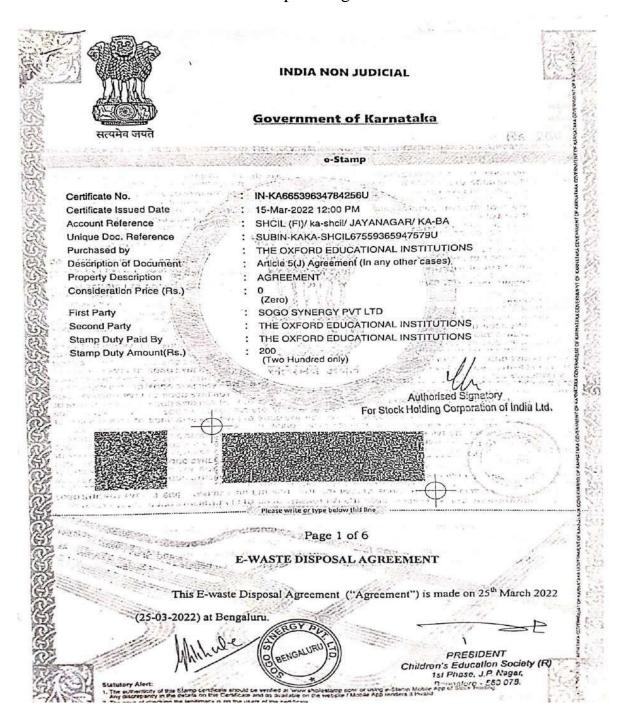
(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

E- Waste Disposal Agreement 2022-2026





(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602. Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



BY AND BETWEEN:

Sogo Synergy Pvt. Ltd.,
(A Company registered under Companies Act, 2013)
3rd Floor, D-1/1,
Hayes Court,
Richmond Town,
Bengaluru – 560 025
Represented by its Vice-President
G.R. LAWHALE,
Mob No. 9538011011

hereinafter called as "Sogo Synergy" which expression wherever the context so requires or admits, shall mean and include its respective heirs, legal representatives, administrators, executors and assigns or any person claiming through or under it.

AND

The Oxford Educational Institutions
Hosur Road,
Bommanahalli Campus,
Bengaluru – 560 068
Under the aegis of Children's Education Society®
(A Society registered under Karnataka Societies Registration Act, 1960)
30th Main, 1st Phase,
JP Nagara,
Bangalore- 560 078
PAN AAATC1553A
represented by its President
SNVL Narasimha Raju
Mob No. 9845037176

hereinaster called as "Society" which expression wherever the context so requires or admits, shall mean and include its respective heirs, legal representatives, administrators, executors and assigns or any person claiming through or under it.

Whereas the Society has IT and all electrical, electronic products/service related hardware material or any other material as may be specified by the Society (the "Material" as hereinafter defined) that it may from time to time wish to dispose off, and SOGO SYNERGY desires to execute a complete dismantling & disposal program on behalf of the Society;

\
PRESIDENT
Children's Education Society (R)

1st Phase, J.P. Nagar, ∹angalore - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Page 3 of 6

Now, therefore, Society shall provide and SOGO SYNERGY shall dismantle & dispose off the Material in accordance with the following terms of this Agreement:

Waste Material

1. Waste Material is hereinafter defined as waste of all forms of electronics equipment, IT equipments like Desktops, Monitor, Servers, Modems & Converters, Switches, ADSL, CPE Telecommunication equipments including but not limited to E-waste in the form of desk tops, servers, network personal equipments, monitors, telephony, printers, faxes, copiers, data assistants process control equipment, server towers, server rack, scanners, batteries, server battery backups, uninterruptable power supplies, electronic storage media and all accessories and peripherals for above mentioned equipments including toners which Society may want to dispose.

Services ·

2. SOGO SYNERGY shall provide following services to collection, transportation and destruction of Waste Material from various locations of the Society. Society will notify places for pick up as per the accumulation of Waste Electrical and Electronic Equipment (WEEE) with different locations pan India collection of the Material, within 15 working days or case to case from the date of notice duly informed by Society by an authorized representative of the Society.

Destructions

3. SOGO SYNERGY shall destruct the entire quantity of Material within 30 working days of receipt of material. Society's authorized representative may also witness the destruction at SOGO SYNERGY facility located at Bengaluru. SOGO SYNERGY shall provide the Society written confirmation through "Certificate of Destruction".

Payment

4. SOGO SYNERGY shall bear all handling costs for the Waste Material collected from the Society in full and all costs associated with the provision of the Services rendered. SOGO SYNERGY shall pay the Society, for the E-waste collected from the Society as per the rates on the basis of case to case inclusive of all taxes.

PRESIDENT

PRESIDENT Children's Education Society (R) 1st Phase, J.P. Nagar, Bangalore - 560 078



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Page 4 of 6

Warrantee

- SOGO SYNERGY Representation and Warranties –
- 5.1 While performing all Services hereunder, SOGO SYNERGY agrees to comply with all applicable permits, all Central, State and local laws, regulations and ordinances and all duly constituted authorities upon request of the Society.
- 5.2 SOGO SYNERGY shall furnish copies thereof in advance. SOGO SYNERGY hereby specifically agree and confirm that it is fully competent to undertake this work from the Society in terms of the "E-waste (Management and Handling) Rules, 2016" and it possesses all the certificates mentioned under the said Rules.
- 5.3 SOGO SYNERGY will be responsible for the statutory compliances including environmental compliances pertaining to the activities and Services mentioned above, "E-waste (Management and Handling) Rules, 2016" and the Society will not in any way be responsible for the same once the Waste Material is handed over by the Society to SOGO SYNERGY.
- 5.4 SOGO SYNERGY has obtained all necessary permits, licenses and other central, state or local authorizations required to perform the Services and upon request of the Society, which shall also furnish copies thereof to the Society.
- 5.5 SOGO SYNERGY shall keep and retain adequate books and records and other documentation consistent with and for the periods required by applicable regulatory requirements and guidelines pertaining to performance of the Services required by this Agreement. The said records, books and documentation relevant to the above-said purpose shall be available for inspection by the Society upon reasonable advance notice.
- 5.6 SOGO SYNERGY shall not resell the Waste Material in the original form which has been collected from the Society except after totally destroying the Waste Material.
- 5.7 As an integral part of this Agreement, SOGO SYNERGY hereby represents that they or any of their officials or representatives shall not give or promise to give any money or gift to any employee/official of the Society to influence its decisions regarding this Agreement, nor shall they exert or utilize any unlawful influence to solicit or secure this Agreement through a promise to pay a commission, percentage, brokerage or contingent fee.

5.8 SOGO SYNERGY shall ensure that the Waste Material is transported safely and there is no leakage during transit.

PRESIDENT Children's Education Society (R) 1st Phase, J.P. Nagar, Enagatore - 560 078.

١



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Page 5 of 6

- 5.9 SOGO SYNERGY confirms and warrants that the Waste Material so collected by it under this Agreement shall not be misused by it directly or indirectly or dealt with in any other manner other than as expressly stated in this Agreement and agrees to indemnify the Society in case such representation/warrantics are breached.
- 5.10 SOGO SYNERGY shall ensure that all Government approvals, statutory compliances as per E Waste Rules as mentioned above and QEHS Quality, Environment, Health and Safety standards.
- 5.11 SOGO SYNERGY shall also assist the Company in maintaining records, statutorily required to be maintained in terms of the above mentioned E-waste Rules, pertaining to e-waste collected from the Society.

6. Business Continuity Management Plan

- 6.1 SOGO SYNERGY shall ensure that at all times it has in place and is able to implement a business continuity and disaster recovery plan which will ensure the continued performance and operational resilience of the Services/deliverables provided by SOGO SYNERGY.
- 6.2 SOGO SYNERGY shall be open to the audit of its business continuity arrangements by the Society as and when required by the Society.

7. Society's Representations and warranties

- 7.1 The Society has free and unencumbered title to all Waste Material delivered to SOGO SYNERGY pursuant to this Agreement.
- 7.2 The Society shall not knowingly ship Hazardous Wastes to SOGO SYNERGY pursuant to this Agreement. In the event Hazardous Wastes are identified upon receipt at or during subsequent processing, such substances shall be quarantined, in a manner sufficient to reasonably protect human health and real and personal property.
- 7.3 The Society shall issue all proper despatch documents (invoices, gate pass, declarations, GST forms etc.), wherever applicable, and Form 6 as per the hazardous waste manifest for transportation along with the Waste Material authorisation and ownership Transfer letter for transport.

Period of Agreement

8. This agreement shall be in force for 5 years effective from 1st day of April 2022 unless and until terminated in a manner set-forth in paragraph. This Agreement may however be

PRESIDENT
Children's Education Society (R)
1st Phase, J.P. Neger,
Rate page - 560 078.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Page 6 of 6

terminated by the Society at any time during the term, without giving any advance notice to SOGO SYNERGY, in case SOGO SYNERGY fails to comply with its obligations under this Agreement.

Termination of Agreement

This Agreement may be terminated at any time by the Society or SOGO SYNERGY, 9. delivering upon 30 days' written notice to the Society or SOGO SYNERGY and in the event of such termination, they will be paid for services performed or amounts due for Waste Material processed up to the date of such termination and not thereafter.

Modification

MANY W

10. This Agreement may not be modified, waived, or extended unless mutually agreed to in writing and it may not be terminated except as provided above. A waiver by either of them of any terms and conditions of this Agreement in one or more instances will not constitute a permanent waiver of such terms and conditions unless so stated in writing.

Resolution of Disputes

The Society and SOGO SYNEGRY shall endeavour to resolve any problem or divergence resulting from the interpretation or application of this Agreement in a spirit of cooperation and mutual understanding. In the event of any dispute or difference arising out of/relating to this Agreement between them, the same shall be settled by arbitration in accordance with the provisions of Indian Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof. Any dispute shall be subject to Bengaluru Jurisdictions.

IN WITNESS WHEREOF both the Society and Sogo Synergy hereto have executed this Agreement on the date first written above.

For and on Behalf of

BENGALUR

Sogo Synergy Pvt. Ltd

Authorized Signatory

Witnesse

Vice-President

Children's Education Society® Authorized Signatory

SNVL NARASIMA RAJU

Children's Education Society (R) 1st Phase, J.P. Nagar,

Bangalore - 560 078. Witnesses

विद्या नवंत्र गोभग

CHILDREN'S EDUCATION SOCIETY (Regd.) THE OXFORD COLLEGE OF ENGINEERING

(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

SOP For Disposal and Liquid Waste



CHILDREN'S EDUCATION SOCIETY (Regd.)

Administrative Office:

1st Phase, J.P. Nagar, Bengaluru - 560 078. ②: 080 - 61754501 - 502 Fax: 080 2654 8658

THE OXFORD COLLEGE OF ENGINEERING

[Recognized by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi & Approved by A.I.C.T.E., New Delhi, Accredited by NAAC & NBA New Delhi and Recognized by UGC under section 2(f)]

Bommanahalli, Hosur Road, Bengaluru - 560 068.

©: 080 61754601 / 602 / 604
E-mail: engprincipal@theoxford.edu Web: www.theoxford.edu

TOCE/IQAC/SOP/2021-2022/C7/01

11/08/2021

STANDARD OPERATING PROCEDURES

SOP For Disposal & Liquid Waste

Sharps contaminated with Biological Waste

Sharps are items that are capable of puncturing, cutting or abrading the skin, e.g., needles, scalpel blades, slides and cover slips. Sharps are deactivated by autoclaving. Place sharps in a container that is red, rigid, puncture resistant, leak-proof and labelled with the biohazard symbol.

- Autoclave your sharps container for a minimum of 30 minutes at 121°C and 15psi
- Log the autoclave run duration, quantity of processed waste, date, and operator
- Label the sharps container with the words "autoclaved"
- Deface any biohazard symbols
- Dispose of the container:
- a) Submit an authorized agency, Note on the request that the container has been autoclaved.
- b) Leave your autoclaved container collection point to pick up by agency.

Liquid Waste

PRINCIPAL
The Oxford College of Engineering
Bommanahalli, Hosur Road
Benggluru-560 088

Platesfor & Head
Department of Biotechnology
The Oxford College of Engineer
Bengalury-560 068.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Liquid wastes, e.g., cell culture media and serum, are deactivated either by autoclaving or chemical disinfection. Most liquid wastes can be deactivated with bleach.

- Chemically disinfect with a 1:10 final dilution (vol/vol) of household bleach
- Swirl flask contents and allow a contact time of 30 minutes
- Pour down a sink drain connected to the campus sewage system and flush the plumbing with an excess of water. Alternatively, liquid waste may be autoclaved for 30 minutes at

121°C and 15psi.

Solid Waste

- Solid biological waste, e.g., pipettes, tissue culture flasks, and multiple well plates, is typically deactivated by autoclaving:
- · Collect solid biological waste directly into autoclavable bags
- * Tie a knot using the upper third of the bag and affix heat sensitive indicator tape near the knot
- Use a secondary container for all autoclave bags until disposal
- Ensure the autoclave operates for 30 minutes at 121°C and 15psi
- Log the autoclave run duration, quantity of processed waste, date, and operator
- Deposit the bag in the red-lidded totes designated for laboratory waste

List of Do's and Don'ts

Do's

- Access to the laboratory is limited or restricted when experiments are in progress.
- · Should use mechanical pipetting devices.
- Should wash hand after handling the material and before the existing the laboratory.
- · Should wipe the bench with a cleaning agent.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



Don'ts

- · Do not do mouth pipetting.
- · Do not eat, drink, smoke, and not apply cosmetics in the work area.
- · All other tubes and tips used in the project do not come in contact with the bacteria.

SOP For hazardous waste & hazardous chemicals

What is Hazardous?

This section will help you identify hazardous chemicals. The Indiana Department of Environmental Management (IDEM) and the U.S. Environmental Protection Agency (EPA) considers chemical waste hazardous if it: - exhibits certain hazardous characteristics, or - is a listed hazardous chemical.

- 1.1.1 Hazardous Characteristics Chemicals which have the following four characteristics are considered to be hazardous by the EPA:
 - . IGNITABILITY A liquid which has a flash point of less than 60 deg C is considered ignitable by the EPA. This includes almost all organic solvents. Some examples are: Ethyl ether, Methanol, Ethanol, Acetone, Toluene, Benzene, Pentane, Hexane, Skelly B, Xylene, Formaldehyde, Heptane, Ethyl Acetate, Petroleum Ether Instructions for the disposal of organic solvents.
 - CORROSIVITY An aqueous solution having a pH of less than or equal to 2, or greater than or equal to 12.5 is considered corrosive by the EPA. Instructions for the disposal of concentrated solutions of acids or bases. Corrosive materials also include thionyl chloride, solid, sodium hydroxide and other nonaqueous acids or bases.
 - REACTIVITY Chemicals that react violently with air or water are considered reactive by the EPA. An example is sodium metal. Reactive materials also include strong oxidizers, such as perchloric acids, and chemicals capable of detonation when subjected to an initiating source, such as old pieric acid and phosphorous. Solutions of eyanide or sulfide that could generate toxic gases are also classified as a reactive by EPA.

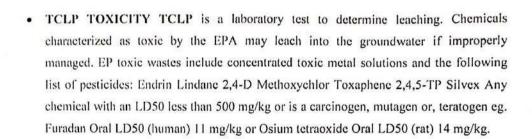


(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



- 1. AQUEOUS SOLUTIONS OF CHEMICALS LISTED UNDER "CHEMICALS FOR THE NORMAL TRASH"
- 2. VERY DILUTE AQUEOUS SOLUTIONS OF WATER-SOLUBLE ORGANIC SOLVENTS.
- 3. CONCENTRATED SOLUTIONS OF ACIDS OR BASES This section explains the disposal of concentrated solutions of acids, such as hydrochloric, sulfuric, and nitric and bases such as ammonium hydroxide. These solutions should be neutralized in the laboratory as described in Section 1.5 below. You should take special care when neutralizing strongly oxidizing acids such as perchloric acid and fresh chromic acid, so call RMS for additional instructions.
- 1.2.1 General Neutralization Procedures CAUTION: FUMES AND HEAT ARE GENERATED
- Do your neutralizations in a well-ventilated hood and behind a safety shield.
- 2. Keep containers cool while neutralizing.
- 3. You should be wearing an apron, goggles, and gloves.
- 4. Perform all steps SLOWLY.
- 5. Neutralize concentrated solutions of acids and bases to within a pH range of greater than 2 and lower than 12.5 and then flush them into the sanitary sewer with at least twenty (20) parts of water.
- 1.2.2 Acid Neutralization While stirring, add acids to large amounts of an ice-water solution of base such as sodium carbonate (soda ash), calcium hydroxide (slaked lime), or 8M sodium



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

hydroxide (for concentrated acids). When a pH above 2 is achieved, dispose of the solution into the sewer system followed by twenty (20) parts of water.

- 1.2.3 Base Neutralization Neutralize by first adding the base to a large vessel containing water. Slowly add a 1M solution of HCL. When a pH of 12.5 is achieved, dispose of into the sewer system followed by twenty parts of water.
- 1.2.4 Chromic Acid 1. Alternatives to Chromic Acid Cleaning Solutions Chromic acid is a powerful oxidizing agent. It is both toxic and corrosive and can explode on contact with organic materials. Users of chromic acid cleaning solutions on campus have suffered burns to both skin and clothing. We urge you to consider the alternatives listed on the next page that clean satisfactorily and are less toxic.
- 1.3.1 Organic Solvents Place your organic solvents in glass bottles or carboys the solvents originally came in or in ones provided by RM&S. Don't put them in the sewer. Halogenated solvents (e.g., chloroform, carbon tetrachloride and dichloromethane) and their mixtures should be kept separate as they are more difficult to dispose of. Be sure to deface or remove original label and attach Chemical Discard tag to bottle. Call RM&S and we'll pick up your spent organic solvents and their associated organic solutes. When we pick up the solvents, the contents will then be commingled in 55 gallon drums and shipped off campus for incineration. We have to pump the contents, so they must be fluid and not contain any solids, precipitates or residues. 1. Substances That Should Not Be Put Into Solvent Waste Containers The following substances are inappropriate for incineration. Don't put them into your organic waste containers. They should be collected in separate containers. Solutions of acids or bases Aqueous solutions of toxic organic chemicals.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi.

Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068. Ph: 080-61754601/602, Fax: 080 - 25730551

Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



Benzene -Dissolve or mix with flammable solvent and then burn in pit or trench in an area at least 10 meters away from combustible material or in a 45/55- gallon drum (use slow burning to ignite).

Phenol - Low levels of solid waste (e.g. gels, contaminated paper towels etc) should be placed into a suitable, leak-tight container and then into a yellow bag and treated as clinical waste for incineration.

Phenol/chloroform - mixtures can be treated as halogenated waste solvent and disposed of accordingly Incineration is the recommended method of disposal. Dissolve the phenol with a combustible solvent and burn in chemical incinerator equipped with an afterburner or scrubber Aqueous solutions or buffer containing phenol may be disposed of in shatter proof bottle using the carrier. Low levels of solid waste (e.g. gels, contaminated paper towel) should be placed into suitable, leak-tight container and then into a yellow bag and treated as clinical waste for incineration.

If phenol waste is the solid waste form, it should be disposed buy making packages of phenol in paper or other flammable material and burning in suitable combustion chamber. If it is in a liquid form, by absorbing it in vermiculite, dry sand, earth or similar material and disposing in a secured sanitary landfill or atomizing in a suitable combustion chamber.

Compounds - Dilute the alkali 1 to 10 times with water (diluted alkalis are less dangerous). Select an acidic material. Strong acids (e.g., hydrochloric acid, sulphuric acid) must be diluted 1:10 or greater prior to utilization.

Inorganic peroxides - Add oxidizing agent to a large volume of a concentrated solution of sodium hypo-bisulfite (sodium metabisulfite) or a ferrous salt. Acidify with dilute Sulphuric acid. When reduction is complete (i.e., when heat generation stops), neutralize the solution with soda ash or dilute hydrochloric acid. Dispose off in sewersystem with a large amount of excess water.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

Recognised by UGC Under Section 2(f)
Bommanahalli, Hosur Road, Bangalore - 560 068.
Ph: 080-61754601/602, Fax: 080 - 25730551
E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org



Acidic halides - To a large container, containing an excess of sodium bicarbonate (or sodium carbonate, or calcium carbonate), slowly add in the organic acid halide, and mix thoroughly. Dilute with water until pH of approximately 6-8 is obtained, let it stand 24 hours. Handover to a Common Effluent Treatment Plant (CETP) for treatment purposes or treat the waste as per the discharge norms prescribed for CETP. Always remember that organic halides may react violently with water. Take necessary precautions while diluting with water (wear PPE, maintain safe distance, keep first aid kit handy etc.)

Inorganic acids - Dilute acids 1 to 10 with water (dilute acids are less dangerous). Dilution should always be by adding acid to water (until fizzing stops), but not water to acid which should be strictly avoided Select a basic material, such as sodium bicarbonate, potassium bicarbonate, calcium bicarbonate, limestone. Strong bases (e.g., sodium hydroxide and potassium hydroxide) must be diluted 1:10 times with water prior to utilization.

Aqueous solutions of water-miscible flammable organic solvents (e.g., solutions of less than 18% acctone, ethanol, methanol and other water-soluble and water-miscible solvents_Add solution to an available flammable solvent (acetone, acetonitrile, benzene, etc of flammability rating 2 or 3). Burn in pit or trench, in an area 10 meters away from any combustible material, or in a 45/55-gallon drum (use slow burning fuse to ignite).

Iodine - In the fume hood, if possible, cautiously add iodine to a solution of sodium thiosulfate (300 ml of 4%) containing sodium carbonate (0.1 g). Stir until all of the iodine has dissolved (solution becomes colorless).

Neutralize to a maximum pH of 8.5 with sodium carbonate (if pH larger than 9, iodine will redissolve).

When reduction is complete, add sodium carbonate or dilute hydrochloric acid to neutralize the solution.

Handover to a Common Effluent Treatment Plant (CETP) for treatment purposes or treat the waste as per the discharge norms prescribed for CETP.



(Recognised by the Govt. of Karnataka, Affiliated to Visvesvaraya Technological University, Belagavi. Approved by A.I.C.T.E. New Delhi.

> Recognised by UGC Under Section 2(f) Bommanahalli, Hosur Road, Bangalore - 560 068.

Ph: 080-61754601/602, Fax: 080 - 25730551 E-mail: engprincipal@theoxford.edu Web: www.theoxfordengg.org

Sodium Hypochlorite - To the sodium hypochlorite solution, add a large excess of a bisulfite or a ferrous salt and acidify with dilute Sulphuric acid.

When the reduction is complete, add soda ash or dilute hydrochloric acid to neutralize the solution.

Handover to a Common Effluent Treatment Plant (CETP) for treatment purposes or treat the waste as per the discharge norms prescribed for CETP.

Disposals of hazardous chemical wastes: Do's and Don'ts

Do's

- ❖Wear safety equipment like gloves, boots, goggles, overalls, aprons, while handling the
- Always have a second person to assist, while handling the chemicals.
- Read all labels prior to handling or moving chemicals.
- Label chemicals clearly with permanent stickers.
- Segregate waste as hazardous and non-hazardous waste.
- * Always dilute acids at a ratio of approximately 1:10 prior to neutralization.

Don'ts

- Don't mix unknown chemicals together and dispose.
- . Don't store/ keep chemicals on floor.
- . Don't use the chemicals from unlabeled containers.
- . Don't eat, drink, gum chewing, during the disposal process.
- . Don't sweep spilled chemicals with broom.
- . Don't dump cloth soaked in spilled chemicals in waste bin.
- Don't use mobile phone while handling disposals.

The Oxford College of Engineering Bommanahalli, Hosur Road

Approved by

Principal

Bengaluru-560 068

Dept di Biotechnology The Oxford College of Engineering Bengaluru-560 068.

Principal

PRINCIPAL The Oxford College of Englage Bommanahalli, Hosuz Ru , Bengaluru-560 068